

# Master Lock®



## ProSeries® Padlock

I | E | C | H | N | I | C | A | I  
H | A | N | U | A | I

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Master Lock introduced the **ProSeries®** product line in 1992 with Weather Tough® and High Security, iron shrouded, rekeyable padlocks. Intent on providing locksmiths with greater ease and flexibility, Master Lock designed the padlocks to use standard components across the line. Since then, **ProSeries®** has grown to include solid body padlocks in Brass, Steel and Aluminum to further satisfy corrosion, security and safety requirements. Most recently, Master Lock has added extensive interchangeable core and door hardware cylinder options to create maximum options for padlock integration into facility padlock and door lock systems. Today, **ProSeries®** is the only product line available for so many different applications, making Master Lock the source for complete commercial security.

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# ProSeries® 6230 Locks Service Procedure

The 6230 is a solid steel body lock using the ProSeries® standard ball bearing locking mechanism. Disassembling for servicing is similar to the rekeyables and may be accomplished by following the steps listed below (refer to diagram at right for parts and orientation).

- Use the key to unlock the shackle, A. (If the key is unavailable you will have to use another method to unlock the shackle).
- Use a 7/64" hexagonal wrench to remove the mounting screw located inside the toe side shackle hole.
- Holding the trap door, D, in place, lock the shackle, A, into the padlock body. (This relieves pressure on the extension.)
- Remove the trap door, D, and the nut, F.
- Remove the cylinder, C.
- Remove the extension, E.
- Remove the locking ball bearings, B, and shackle, A.

The order may be reversed to reassemble the lock. A light application of assembly grease may be used to hold the ball bearings in place during assembly.

If the lock only needs to be rekeyed, it is not necessary to remove the extension, ball bearings, or shackle.


Two functions are available in the locks, NKR (Non Key Retaining) and NRK (Non Removable Key) and both functions are accomplished as a design feature of the extension.

The NKR, non key retaining, function extension (6121-0425) used in the lock has a projection on one side. You should note the orientation of this projection when removing the extension so that you can easily reinstall it during the reassembly process.

The NRK, non removable key, function extension (6121-0426) does not have a projection to help with orientation and you will have to rely on the position of the half-moon shaped actuator that the tail of the cylinder contacts.



6230 NKR & NRK Extensions

		Shackle	
		Vertical Clearance	
		1-1/8"	2"
Lock Number	6230	293S6121	n/a
	6230LH	n/a	293S6125



# ProSeries® Rekeyables, Weather Tough® Service Procedure

## 6121, 6125, 6127 Series

One of the original ProSeries® locks, the Weather Tough® is actually a laminated steel lock with a protective Noryl covering to seal out contaminants. All Weather Tough® locks are supplied with cylinders that have a six pin length and depending upon the keyway are supplied with four, five or six pin tumblers.

Readily adaptable to keying alike with any of our products with the wide range of cylinder keyways available as shown on page 23, it is easily serviced following the steps below.

- Use the key to unlock the shackle, A. (If the key is unavailable you will have to use another method to unlock the shackle.)
- Use a 7/64" hexagonal wrench to remove the mounting screw located inside the toe side shackle hole.
- Holding the trap door, D, in place, lock the shackle, A, into the padlock body. (This relieves pressure on the extension, E.)
- Remove the trap door, D, and the nut, F.
- Remove the cylinder, C.
- Remove the extension, E.
- Remove the locking ball bearings, B, and shackle, A.

The order may be reversed to reassemble the lock. A light application of assembly grease may be used to hold the ball bearings in place during assembly.

If rekeying is the only service required, it is not necessary to remove the extension, ball bearings or shackle.

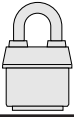
Two operating functions are available for this lock, NKR (Non Key Retaining) and NRK (Non Removable Key) and both functions are accomplished as a design feature of the extension.

The NKR function extension used in the lock has a projection on one side. This projection fits into a relieved area in the padlock body and you should note the orientation of this projection, (roughly 8:00 o'clock), before removal and reinstallation will be made easier with that in mind. The NKR function extension used in all Weather Tough® locks is Master Lock part number 6121-0423 and they are supplied in bags containing six extensions.

The NRK function extension does not have a locating projection and it is important to note the position of the half moon shelf before removal. to make reinstallation a simple process. The NRK function extension used in all Weather Tough® locks is Master Lock part number 6121-0424 and they are supplied with six each in a bag.

Shackles for the Weather Tough® locks are available with different clearances from the body to the inside of the U. The matrix below indicates the correct part number for the options available for each model. As with extensions, shackles are supplied in bags of six.



		Shackle					
		Vertical Clearance					
		1-1/8"	1-3/8"	1-1/2"	1-7/8"	2-3/8"	5-3/4"
Lock Number	6121	293S6121	n/a	293LF6121	n/a	293LJ6121	293LN6121
	6125	n/a	293S6125	n/a	n/a	293LJ6125	n/a
	6127	n/a	293S6127	n/a	293LH6127	293LJ6127	293LN6127



# ProSeries® Rekeyables, Iron Shrouded Service Procedure

## 6321, 6325, 6327 Series

The Iron Shrouded ProSeries® was another original offering in the line and is also has a laminated steel body. The lower half has a Noryl covering while the top has a cast iron shroud, it is supplied with cylinders that have a six pin length and depending upon the keyway are supplied with four, five or six pin tumblers.

Readily adaptable to keying alike with any of our products with the wide range of cylinder keyways available as shown on page 23, it is easily serviced following these steps;

- Use the key to unlock the shackle, A. (If the key is unavailable you will have to use another method to unlock the shackle.)
- Use a 7/64" hexagonal wrench to remove the mounting screw located inside the toe side shackle hole.
- Holding the trap door, D, in place, lock the shackle, A, into the padlock body. (This relieves pressure on the extension, E.)
- Remove the trap door, D, and the nut, F.
- Remove the cylinder, C.
- Remove the extension, E.
- Remove the locking ball bearings, B, and shackle, A.

The order may be reversed to reassemble the lock. A light application of assembly grease may be used to hold the ball bearings in place during assembly.

If rekeying is the only service required, it is not necessary to remove the extension, ball bearings or shackle.

Two operating functions are available for this lock, NKR (Non Key Retaining) and NRK (Non Removable Key) and both functions are accomplished as a design feature of the extension.

The NKR function extension used in the lock has a projection on one side. This projection fits into a relieved area in the padlock body and you should note the orientation of this projection, (roughly 8:00 o'clock), before removal and reinstallation will be made easier with that in mind. The NKR function extension used in all Iron Shrouded locks is Master Lock part number 6121-0423 and they are supplied in bags containing six extensions.

The NRK function extension does not have a locating projection and it is important to note the position of the half moon shelf before removal to make reinstallation a simple process. The NRK function extension used in all Iron Shrouded locks is Master Lock part number 6121-0424 and they are supplied with six each in a bag.

The shackle for the Iron Shrouded locks is available in a single size. The standardized clearance from the body to the inside of the U ensures that the shackle is not exposed to bolt cutters, etc. The matrix below indicates the correct part number for the shackle for each model. As with extensions, shackles are supplied in bags of six.



		<b>Shackle</b>	
		<b>Vertical Clearance</b>	
		<b>3/4"</b>	
<b>Lock Number</b>	6321	293S6321	
	6325	293S6325	
	6327	293S6327	



# ProSeries® Weather Tough® and Iron Shrouded IC Version Service Procedure

## 6421, 6427, 6521, 6527 Series

The Small Format Interchangeable Core, (SFIC), versions of the Weather Tough® and Iron Shrouded ProSeries® locks uses the same basic locking principles as the standard Rekeyables but the component parts are different to accommodate the different cylinder type.

Exchanging the SFIC is as simple as it is in any other SFIC compatible padlock. If you want to service the lock body or change the locking function there is a slightly different procedure from the Rekeyable version, those steps are outlined here;

- Use the Control Key to remove the Interchangeable Core, C. (If the Control Key is unavailable you will have to use another method to remove the IC.)
- Remove the C-clip retainer by rotating with a screwdriver.
- Remove the steel retainer plate.
- Remove the throw member.
- Remove the extension, E.
- Remove the locking ball bearings, B, and the shackle, A.

The order may be reversed to reassemble the lock. A light application of assembly grease may be used to hold the ball bearings in place during assembly.

If rekeying is the only service required, it is not necessary to remove the extension, ball bearings or shackle.

Two operating functions are available for this lock, NKR (Non Key Retaining) and NRK (Non Removable Key) and both functions are accomplished as a design feature of the extension.

The NKR function extension used in the lock has a projection on one side. This projection fits into a relieved area in the padlock body and you should note the orientation of this projection, (roughly 8:00 o'clock), before removal and reinstallation will be made easier with that in mind. The NKR function extension used in all Weather-Tough® and Iron Shrouded locks is Master Lock part number 6121-0423 and they are supplied in bags containing six extensions.

The NRK function extension does not have a locating projection and it is important to note the position of the half moon shelf before removal. to make reinstallation a simple process. The NRK function extension used in all Weather-Tough® and Iron Shrouded locks is Master Lock part number 6121-0424 and they are supplied with six each in a bag.

The shackles available for the IC versions of the Weather Tough® and Iron Shrouded lock can be found in the matrix below. As with extensions, shackles are supplied in bags of six.



		Shackle					
		Vertical Clearance					
		3/4"	1-1/8"	1-3/8"	1-1/2"	1-7/8"	2-3/8"
Lock Number	6421	n/a	293S6121	n/a	293LF6121	n/a	293LJ6121
	6427	n/a	n/a	293S6127	n/a	293LH6127	293LJ6127
	6521	293S6321	n/a	n/a	n/a	n/a	n/a
	6527	293S6327	n/a	n/a	n/a	n/a	n/a





# ProSeries® Weather Tough® and Iron Shrouded Door Hardware Version Service Procedure

## 6621, 6627, 6721, 6727 Series

The Door Hardware compatible versions of the Weather Tough® and Iron Shrouded ProSeries® locks use the same basic locking principles as the standard Rekeyables but the component parts are different to accommodate the different cylinder type.

In addition to cylinders available from Master Lock, quite a few other manufacturers' cylinders are accommodated as well to offer more versatility. This is accomplished through the use of different drivers that transfer motion from the cylinder to the extension. Detailed information on the different drivers can be found on page 22. Servicing the lock or changing the locking function may be accomplished by;

- Use the key to unlock the shackle, A. (If the key is unavailable you will have to use another method).
- Use a 7/64" hexagonal wrench to remove the mounting screw inside the toe side shackle hole.
- Holding the plug retainer, D, in place, lock the shackle, A, into the padlock body. (This relieves pressure on the extension, E.)
- Remove the cylinder, C, and plug retainer, D.
- Remove the extension, E.
- Remove the locking ball bearings, B, and shackle, A.

The order may be reversed to reassemble the lock. A light application of assembly grease may be used to hold the ball bearings in place during assembly.

If rekeying is the only service required, it is not necessary to remove the extension, ball bearings or shackle.

Two operating functions are available for this lock, NKR (Non Key Retaining) and NRK (Non Removable Key) and both functions are accomplished as a design feature of the extension. The extensions available for use are the same as used in the Rekeyable and IC versions.

The shackles available for the Door Hardware versions of the Weather Tough® and Iron Shrouded lock can be found in the matrix below. As with extensions, shackles are supplied in bags of six.



**6121 NKR & NRK Extensions**

		Shackle					
		Vertical Clearance					
		3/4"	1-1/8"	1-3/8"	1-1/2"	2-3/8"	5-3/4"
Lock Number	6621	n/a	293S6121	n/a	293S6121	293LJ6121	293LN6121
	6627	n/a	n/a	293S6127	n/a	293LJ6127	293LN6127
	6721	293S6321	n/a	n/a	n/a	n/a	n/a
	6727	293S6327	n/a	n/a	n/a	n/a	n/a



# ProSeries® Solid Body Locks

## 6800, 7000 Series

Three distinct generations of ProSeries® solid body locks have been available since their introduction. There are distinct external and internal features that can be used to tell the difference.



### Generation I

#### 6800 Series Brass and Aluminum solid body

- Drain hole located on side or back of the body approximately half way up and another drain hole under heel side of shackle.
- Uses and 8 o'clock extension.
- Teardrop shaped trap door on Rekeyable.
- Only aluminum body has a shackle spring.



### Generation II

#### 6800 Series Brass and Aluminum solid body, 7000 Series Steel solid body

- Drain hole located on back of body and under heel side of shackle.
- Uses a 12 o'clock extension.
- Date code on bottom.
- Teardrop shaped trap door on Rekeyable.
- Only aluminum body has a shackle spring.



### Generation III

#### 6800 Series Brass and Aluminum solid body, 7000 Series Steel solid body

- Drain hole under heel side of shackle only.
- Uses a new design extension.
- Date code on bottom.
- Oval shaped trap door on Rekeyable.
- All models have a shackle spring.

## Extensions

The Generation I locks use the same extensions as the Weather Tough® and Iron Shrouded locks for the '40' and '50' size locks, i.e. 6840, 7040, 6850, 7050, etc. and a slightly smaller extension for the '30' size. Extensions for Generation III locks have a more universal design and a single size that creates fewer unique part numbers. The matrix below indicates the correct extension based upon generation and basic size parameters.



	Extensions					
	Generation I		Generation II		Generation III	
	NKR*	NRK**	NKR*	NRK**	NKR*	NRK**
6830 Series	6830-0421	6830-0422	6831-0421	6830-0422	All Rekeyables	
6840 Series	6121-0423	6121-0424	6841-0421	6830-0424	7050-0362	7050-0363
6850 Series	6121-0423	6121-0424	6841-0421	6830-0424	All Interchangeable Core	
7030 Series	6831-0421	6830-0422	6831-0421	6830-0422	7051-0362	7051-0363
7040 Series	6841-0421	6830-0424	6841-0421	6830-0424	All Door Hardware	
7050 Series	6841-0421	6830-0424	6841-0421	6830-0424	7052-0362	7052-0363

\*NKR = Non Key Retaining. Key can be removed anytime.

\*\*NRK = Non Removable Key. Key can be removed only when shackle is locked in position.





# Extensions

Generation I and II extensions are pre-assembled non-serviceable assemblies designed for replacement only. Generation III extensions are a three piece assembly that may be disassembled for cleaning if required. Each extension consists of;

- A driver
- A spring
- A locking cam

In order for the universal driver to function with cylinders that have a screw-on retainer you will need to use the 7052-00028 drive plate with that retainer. Two different extensions are available to change the function from the standard NKR to the NRK. The only difference in the two extensions is the configuration of the locking cam as shown here.

There are three versions of this extension;

1. Rekeyable
2. IC
3. Door Hardware

Should you need to disassemble the extension for servicing or cleaning, reassembly is a simple process following this simple procedure.

On the locking cam there is a projection at the top. In the NKR locking cam it is just over .080" wide and in the NRK locking cam it is just over .350" wide. In both cams there is a well that holds the spring and in the bottom of the well you can see two crescent shaped cutouts, one large and one small.

1. Place the short end of the spring into the larger hole and position the other longer end of the spring left of the projection at the top of the locking cam so that the diameter of the spring is centered over the hole in the center of the cam.
2. On the driver, you will notice two cutouts, one deeper than the other. you want to capture the long end of the spring in the shallower cutout and then, place the driver post into the center hole of the locking cam allowing it to capture the spring.
- 3 Rotate the driver CCW (counter-clock wise) while pushing it toward the locking cam until it seats.

At this point the extension assembly may be replaced in the padlock body.

New "Plate"  
Photo





# ProSeries® Rekeyables, Solid Body Generation I & II

## Extension Service Procedure

**6830, 6835, 6840, 6850, 7030, 7035, 7040, 7045, 7050 Series**

The disassembly, reassembly and service procedures for solid body locks with generation I and II extensions are identical with the exception of locating the extension via the 8:00 o'clock or the 12:00 o'clock positioning feature. Note the type used when disassembling the lock to use the correct orientation when reassembling. Below is the step-by-step service procedure;

- Use the key to unlock the shackle. (If the key is unavailable you will have to use another method to unlock the shackle.)
- Use a 7/64" hexagonal wrench to remove the mounting screw located inside the toe side shackle hole.
- Holding the trap door, D, in place, lock the shackle, A, into the padlock body. (This relieves pressure on the extension, E.)
- Remove the trap door, D, and the nut, F.
- Remove the cylinder, C.
- Remove the extension, E.
- Remove the locking ball bearings, B, and shackle, A.

The order may be reversed to reassemble the lock. A light application of assembly grease may be used to hold the ball bearings in place during assembly.

If the lock only needs to be rekeyed, it is not necessary to remove the extension, ball bearings or shackle.

Two functions are available in the locks, NKR (Non Key Retaining) and NRK (Non Removable Key) and both functions are accomplished as a design feature of the extension. Consult the [chart](#) below and the extension information on page 7 and 8 for exact details.

	XX 30 Series		XX 40 & 50 Series	
	NKR	NRK	NKR	NRK
<b>Generation I</b>	6121-0421	6121-0422	6121-0423	6121-0424
<b>Generation II</b>	6831-0421	6121-0422	6841-0431	6121-0424

A listing of shackle options available is shown below, shackle part numbers shown are for a bag of six.



**Generation I & II Extensions**

		Shackle							
		Vertical Clearance							
		1 1/16"	1 3/16"	1 1/2"	1 9/16"	2 7/16"	2 1/2"	3"	5 3/4"
Lock Number	6830	293S6830	n/a	n/a	293LF6830	n/a	n/a	293LT6830	n/a
	6835	293S6830	n/a	n/a	293LF6830	n/a	n/a	n/a	n/a
	6840	n/a	293S6121	n/a	293LF6121	293LJ6121	293LN6127	n/a	293LN6121
	6850	n/a	n/a	293S6125	n/a	n/a	293LJ6125	n/a	n/a
	7030	293S6830	n/a	n/a	293LF6830	n/a	n/a	293LT6830	n/a
	7035	293S6830	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	7040	n/a	293S6121	n/a	n/a	n/a	293LJ6121	n/a	n/a
	7045	n/a	293S6121	n/a	n/a	n/a	n/a	n/a	n/a
	7050	n/a	n/a	293S6125	n/a	n/a	293LJ6125	n/a	n/a



# ProSeries® Interchangeable Core Generation I and II Solid Body Service Procedure

**6831, 6836, 6841, 6851, 7031, 7036, 7041, 7046, 7051 Series**

The disassembly, reassembly and service procedures for solid body SFIC locks with generation I and II extensions are identical with the exception of locating the extension via the 8:00 o'clock or the 12:00 o'clock positioning feature. Note the type used when disassembling the lock to use the correct orientation when reassembling. Below is the step-by-step service procedure;

- Use the Control Key to remove the Interchangeable Core. (If the Control Key is unavailable you will have to use another method to remove the IC.)
- Remove the C-clip retainer by rotating with a screwdriver.
- Remove the steel retainer plate.
- Remove the throw member.
- Remove the extension, E.

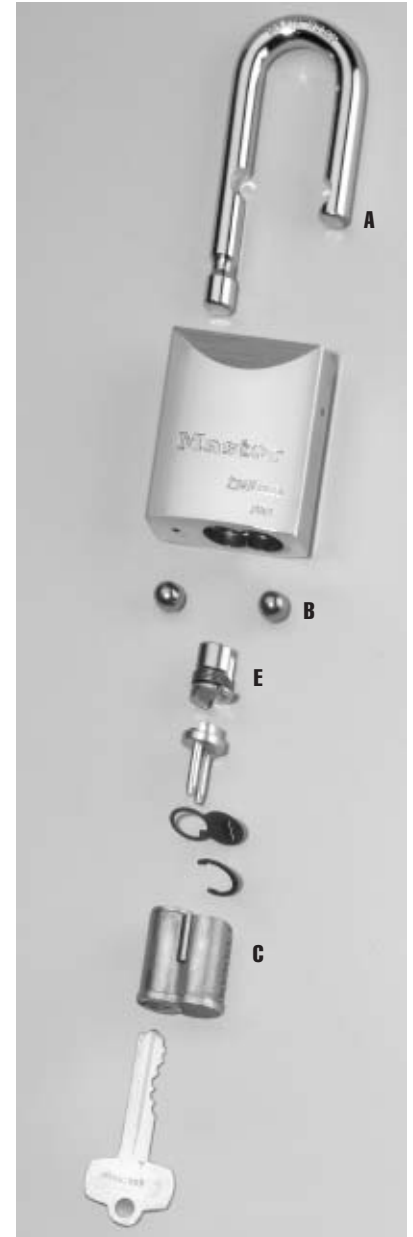
The order may be reversed to reassemble the lock. A light application of assembly grease may be used to hold the ball bearings in place during assembly.

If the IC only needs to be rekeyed, it is not necessary to remove the extension, ball bearings or shackle.

Two functions are available in the locks, NKR (Non Key Retaining) and NRK (Non Removable Key) and both functions are accomplished as a design feature of the extension. Consult the [chart](#) below and the extension information on pages 7 and 8 for exact details.

	XX 30 Series		XX 40 & 50 Series	
	NKR	NRK	NKR	NRK
<b>Generation I</b>	6121-0421	6121-0422	6121-0423	6121-0424
<b>Generation II</b>	6831-0421	6121-0422	6841-0431	6121-0424

A listing of shackle options available is shown below, shackle part numbers shown are for a bag of six.



**Generation I & II  
Extensions**

		Shackle							
		Vertical Clearance							
		1 1/16"	1 3/16"	1 1/2"	1 9/16"	2 7/16"	2 1/2"	3"	5 3/4"
<b>Lock Number</b>	6831	293S6830	n/a	n/a	293LF6830	n/a	n/a	293LT6830	n/a
	6836	293S6830	n/a	n/a	293LF6830	n/a	n/a	293LT6830	n/a
	6841	n/a	293S6121	293LF6121	n/a	293LJ6121	n/a	n/a	n/a
	6851	n/a	n/a	293S6125	n/a	n/a	293LJ6125	n/a	n/a
	7031	293S6830	n/a	n/a	293LF6830	n/a	n/a	293LT6830	n/a
	7036	293S6830	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	7041	n/a	293S6121	n/a	n/a	n/a	293LJ6121	n/a	n/a
	7046	n/a	293S6121	n/a	n/a	n/a	n/a	n/a	n/a
	7051	n/a	n/a	293S6125	n/a	n/a	293LJ6125	n/a	n/a



# ProSeries® Door Hardware Generation I and II Solid Body Service Procedure

6842, 6852, 7042, 7047, 7052 Series

The disassembly, reassembly and service procedures for solid body Door Hardware locks with generation I and II extensions are identical with the exception of locating the extension via the 8:00 o'clock or the 12:00 o'clock positioning feature. Note the type used when disassembling the lock to use the correct orientation when reassembling. Below is the step-by-step service procedure;

- Use the key to unlock the shackle, A. (If the key is unavailable you will have to use another method).
- Use a 7/64" hexagonal wrench to remove the mounting screw inside the toe side shackle hole.
- Holding the plug retainer, D, in place, lock the shackle, A, into the padlock body. (This relieves pressure on the extension, E.)
- Remove the cylinder, C, and plug retainer, D.
- Remove the extension, E.
- Remove the locking ball bearings, B, and shackle, A.

The order may be reversed to reassemble the lock. A light application of assembly grease may be used to hold the ball bearings in place during assembly.

If the IC only needs to be rekeyed, it is not necessary to remove the extension, ball bearings or shackle.

Two functions are available in the locks, NKR (Non Key Retaining) and NRK (Non Removable Key) and both functions are accomplished as a design feature of the extension. Consult the [chart](#) below and the extension information on pages 7 and 8 for exact details.

	NKR	NRK
Generation I	6121-0423	6121-0424
Generation II	6841-0421	6121-0424

A listing of shackle options available is shown below, shackle part numbers shown are for a bag of six.



		Shackle							
		Vertical Clearance							
		1 1/16"	1 3/16"	1 1/2"	1 9/16"	2 7/16"	2 1/2"	3"	5 3/4"
Lock Number	6842	n/a	293S6121	293LF6121	n/a	n/a	293LJ6125	n/a	n/a
	6852	n/a	n/a	293S6125	n/a	n/a	293LJ6125	n/a	n/a
	7042	n/a	293S6121	n/a	n/a	n/a	293LJ6121	n/a	n/a
	7047	n/a	293S6121	n/a	n/a	n/a	n/a	n/a	n/a
	7052	n/a	n/a	293S6125	n/a	n/a	293LJ6125	n/a	n/a



# ProSeries® Rekeyables, Generation III Solid Body Service Procedure

## 6830, 6835, 6840, 6850, 7030, 7035, 7040, 7045, 7050 Series

The disassembly, reassembly and service procedures for solid body locks with generation I and II extensions are identical with the exception of locating the extension via the 8:00 o'clock or the 12:00 o'clock positioning feature. Note the type used when disassembling the lock to use the correct orientation when reassembling. Below is the step-by-step service procedure;

- Use the key to unlock the shackle. (If the key is unavailable you will have to use another method to unlock the shackle.)
- Use a 7/64" hexagonal wrench to remove the mounting screw located inside the toe side shackle hole.
- Holding the trap door, D, in place, lock the shackle, A, into the padlock body. (This relieves pressure on the extension, E.)
- Remove the trap door, D, and the nut, F.
- Remove the cylinder, C.
- Remove the extension, E.
- Remove the locking ball bearings, B, and shackle, A, and shackle spring.

The order may be reversed to reassemble the lock. A light application of assembly grease may be used to hold the ball bearings in place during assembly.

If the cylinder only needs to be rekeyed, it is not necessary to remove the extension, ball bearings or shackle.

Two functions are available in the locks, NKR (Non Key Retaining) and NRK (Non Removable Key) and both functions are accomplished as a design feature of the extension. Consult the extension information on pages 7 and 8 for exact details.

A listing of shackle options available is shown below, shackle part numbers shown are for a bag of six.



**Generation III Extension**

		Shackle							
		Vertical Clearance							
		3/4"	1"	1 1/16"	1 3/16"	1 1/2"	1 9/16"	2 1/2"	3"
Lock Number	6830	n/a	n/a	293S7030	n/a	n/a	293LF7030	n/a	293LT7030
	6835	n/a	n/a	293S7030	n/a	n/a	293LF7030	n/a	293LT7030
	6840	293LS7040	293S7040	n/a	n/a	293LJ7040	n/a	n/a	n/a
	6850	293LS7050	n/a	n/a	293S7050	n/a	n/a	293LJ7050	n/a
	7030	n/a	n/a	293S7030	n/a	n/a	293LF7030	n/a	293LT7030
	7035	n/a	n/a	293S7030	n/a	n/a	n/a	n/a	n/a
	7040	293LS7040	293S7040	n/a	n/a	293LJ7040	n/a	n/a	n/a
	7045	n/a	293S7040	n/a	n/a	n/a	n/a	n/a	n/a
	7050	293LS7050	n/a	n/a	293S7050	n/a	n/a	293LJ7050	n/a



# ProSeries® Interchangeable Core Generation III Solid Body Service Procedure

**6831, 6836, 6841, 6851, 7031, 7036, 7041, 7046, 7051 Series**

The disassembly, reassembly and service procedures for solid body SFIC locks with generation I and II extensions are identical with the exception of locating the extension via the 8:00 o'clock or the 12:00 o'clock positioning feature. Note the type used when disassembling the lock to use the correct orientation when reassembling. Below is the step-by-step service procedure;

- Use the Control Key to remove the Interchangeable Core. (If the Control Key is unavailable you will have to use another method to remove the IC.)
- Remove the C-clip retainer by rotating with a screwdriver.
- Remove the extension, E.
- Remove the extension, E.
- Remove the locking ball bearings, B, and shackle, A, and shackle spring.

The order may be reversed to reassemble the lock. A light application of assembly grease may be used to hold the ball bearings in place during assembly.

If the IC only needs to be rekeyed, it is not necessary to remove the extension, ball bearings or shackle and shackle spring.

Two functions are available in the locks, NKR (Non Key Retaining) and NRK (Non Removable Key) and both functions are accomplished as a design feature of the extension. Consult the extension information on pages 7 and 8 for exact details.

A listing of shackle options available is shown below, shackle part numbers shown are for a bag of six.



		<b>Shackle</b>							
		<b>Vertical Clearance</b>							
		<b>3/4"</b>	<b>1"</b>	<b>1 1/16"</b>	<b>1 3/16"</b>	<b>1 1/2"</b>	<b>1 9/16"</b>	<b>2 1/2"</b>	<b>3"</b>
<b>Lock Number</b>	6831	n/a	n/a	293S7030	n/a	n/a	293LF7030	n/a	293LT7030
	6836	n/a	n/a	293S7030	n/a	n/a	293LF7030	n/a	293LT7030
	6841	293LS7040	293S7040	n/a	n/a	293LJ7040	n/a	n/a	n/a
	6851	293LS7050	n/a	n/a	293S7050	n/a	n/a	293LJ7050	n/a
	7031	n/a	n/a	293S7030	n/a	n/a	293LF7030	n/a	293LT7030
	7036	n/a	n/a	293S7030	n/a	n/a	n/a	n/a	n/a
	7041	293LS7040	293S7040	n/a	n/a	293LJ7040	n/a	n/a	n/a
	7046	n/a	293S7040	n/a	n/a	n/a	n/a	n/a	n/a
	7051	293LS7050	n/a	n/a	293S7050	n/a	n/a	293LJ7050	n/a





# ProSeries® Door Hardware Generation III Solid Body Service Procedure

## 6832, 6821, 6852, 7032, 7037, 7042, 7047, 7052 Series

The disassembly, reassembly and service procedures for solid body Door Hardware locks with generation I and II extensions are identical with the exception of locating the extension via the 8:00 o'clock or the 12:00 o'clock positioning feature. Note the type used when disassembling the lock to use the correct orientation when reassembling. Below is the step-by-step service procedure;

- Use the key to unlock the shackle, A. (If the key is unavailable you will have to use another method).
- Use a 7/64" hexagonal wrench to remove the mounting screw inside the toe side shackle hole.
- Holding the plug retainer, D, in place, lock the shackle, A, into the padlock body. (This relieves pressure on the extension, E.)
- Remove the cylinder, C, and plug retainer, D.
- Remove the extension, E.
- Remove the locking ball bearings, B, and shackle, A.

The order may be reversed to reassemble the lock. A light application of assembly grease may be used to hold the ball bearings in place during assembly.

If the cylinder only needs to be rekeyed, it is not necessary to remove the extension, ball bearings or shackle and shackle spring.

Two functions are available in the locks, NKR (Non Key Retaining) and NRK (Non Removable Key) and both functions are accomplished as a design feature of the extension. Consult the extension information on pages 7 and 8 for exact details.

A listing of shackle options available is shown below, shackle part numbers shown are for a bag of six.



		Shackle							
		Vertical Clearance							
		3/4"	1"	1 1/16"	1 3/16"	1 1/2"	1 9/16"	2 1/2"	3"
Lock Number	6832	n/a	n/a	293S7030	n/a	n/a	293LF7030	n/a	293LT7030
	6837	n/a	n/a	293S7030	n/a	n/a	293LF7030	n/a	293LT7030
	6842	293LS7040	293S7040	n/a	n/a	293LJ7040	n/a	n/a	n/a
	6852	293LS7050	n/a	n/a	293S7050	n/a	n/a	293LJ7050	n/a
	7032	n/a	n/a	293S7030	n/a	n/a	293LF7030	n/a	293LT7030
	7037	n/a	n/a	293S7030	n/a	n/a	n/a	n/a	n/a
	7042	293LS7040	293S7040	n/a	n/a	293LJ7040	n/a	n/a	n/a
	7047	n/a	293S7040	n/a	n/a	n/a	n/a	n/a	n/a
	7052	293LS7050	n/a	n/a	293S7050	n/a	n/a	293LJ7050	n/a



# Cylinders and Retainers

Master Lock Company makes seven basic cylinder sizes/types for use in our padlocks;

1. A small diameter cylinder for some of our laminated locks.
2. A four pin cylinder for our laminated locks.
3. A five pin cylinder for our laminated rekeyable locks
4. A six pin cylinder for our ProSeries® locks.
5. A cylinder for our number 19 lock.
6. Cylinders compatible with various door hardware locks made by others.
7. SFIC small format interchangeable core cylinders.

1. The small diameter cylinder is generally referred to as the number W7 cylinder and is used in various products where the available space is limited. This cylinder is used in the number 7 laminated padlock, the gun lock, etc., and is generally not accessible for rekeying. In those cases where it can be rekeyed, it uses the same pins used in the first four classes above. Those pins are available in our #291 pinning kit found on page 19. See page 14 for service procedures.



2. The four pin cylinder is generally referred to as the number W1 cylinder and is used in the number 1, 3, 5 laminated padlocks, and many other products. In many cases it is not accessible for rekeying, but when it can be rekeyed you may use our #291 pinning kit. Servicing procedures may be found on page 14.



3. The five pin cylinder is generally known as our number W27 cylinder and is found in our laminated rekeyable locks such as the number 21, 24, 25, and 27. It may be rekeyed using our #291 pinning kit shown on page 19.



There are times when you may want to use a four pin cylinder in a lock designed for the five pin cylinder because of keyway compatibility. That can be accomplished by using the 27-0334 plug extension which adapts the four pin cylinder to the five pin length.

4. The six pin cylinder is referred to by two different part numbers, depending on the number of pin chambers that are pinned. When pinned with only five pins, it is called the W6000 and if all six pins are used it is called the W7000. This cylinder is found in our ProSeries® products and may also be rekeyed using our #291 pinning kit.



Effective mid-2001, Master Lock Company will implement a new six pin cylinder and key. The cylinder will change from a crimp to an E-clip which reflects tighter tolerances between the plug and shell. The new key has a radiused blade bottom. This running change should have no effect on key operation from old to new cylinder types.



You can use two of the 27-0334 plug adapters to install a four pin cylinder where a six pin one would normally be required. It isn't possible to install a five pin cylinder where a six pin is required. See page 14 for keyways and part numbers.



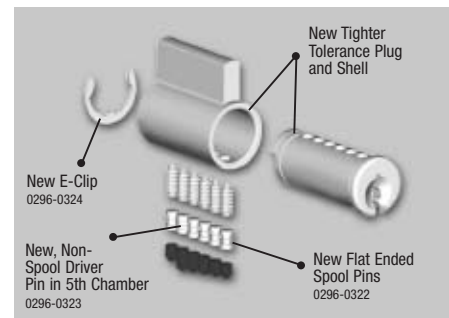
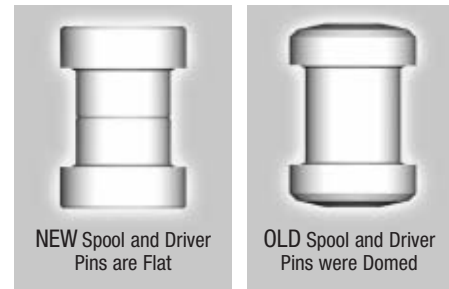
# Improved Pro Series® Cylinders

## CYLINDER AND KEY ENHANCEMENTS

In August 2001, Master Lock made enhancements to our W6000 and W7000 cylinders used in the Pro Series™ padlocks. The tighter manufacturing tolerances expand the number of key codes available while at the same time reducing the risk of inadvertent key interchange.

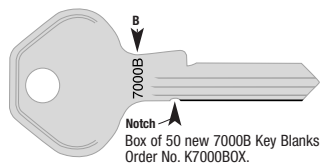
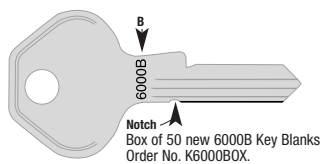
The keys affected are the 6000 and 7000. Rounded bottom keys stamped 6000B and 7000B have replaced them.

New “B” keys and old keys can be used in the exact same padlock. Just be sure to use care when duplicating the key. If you do not have the exact same blank as the key you are duplicating, you must cut by code to avoid the new cut key from being off by .0135" and unusable.



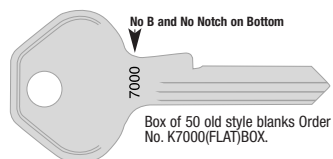
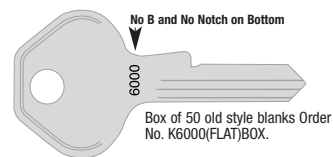
### NEW KEYS ROUND ON THE BOTTOM

Avoid duplicating an old style key onto a new “B” style round-back blank. Cuts will be .0135" too deep. Use codes below to cut.



### OLD KEYS FLAT ON THE BOTTOM

Avoid duplicating a “B” round-back key onto an old style blank. Cuts will be .0135" too shallow. Use codes below to cut.



Cut	Root Depth
0	.2845"
1	.2690"
2	.2535"
3	.2380"
4	.2225"
5	.2070"
6	.1915"
7	.1760"



Cut	Root Depth
0	.271"
1	.256"
2	.240"
3	.225"
4	.209"
5	.194"
6	.178"
7	.163"





# Cylinders and Retainers *continued*

5. The W19 cylinder is only used in the number 19 lock and it is not really accessible for rekeying without drilling the rivets. This cylinder uses .125" diameter pins and a .025" increment. The shell is crimped on both sides and does not allow the service technique typical on the old style W1 cylinder. The only option available for rekeying would be to use the holes on the bottom of the shell to remove pins from the plug and replace them with new ones.



6. The door hardware cylinders are rekeyable using standard .115" diameter pins. The plug is mounted to the shell with a ring retainer, and use of a follower is recommended for rekeying. In order to mount the cylinders in the lock, a cylinder retainer plug is placed over the bible of the cylinder. The retainer plug has a threaded hole used to mount it to the lock via the toe side shackle hole and the socket screw. This cylinder also requires a special driver to be placed between the cylinder tail and the lock extension in order to function. The listing below allows construction of a correct cylinder part number when ordering from Master Lock.



## D045KD

Door Hardware Cylinder

Keying Specification

Keyway

KD – Keyed Different  
KA – Keyed Alike  
KZ – Zero Bitted  
KDMK – KD Master Keyed  
KAMK – KA Masker keyed

Manufacturer's Brand Name

Arrow	10	Russwin D1	30
Corbin 59A1-2	01	Sargent LA-LC*	36
Corbin 60	29	Sargent RA-RC*	70
Corbin Russwin L4	07	Sargent S*	02
Falcon 1573, 1577*	14	Sargent U*	02
Harloc SE-1*	02	Schlage C	04
Kwikset*	12	Schlage E	34
Lockwood	08	Segal 9.265	27
Lori L200*	02	Weiser*	13
Lori Locksmith 80	80	Weslock	33
Loricentric 90	90	Yale 8	03
Master/Dexter 67*	32	Yale GA	15
Russwin 981/852	11		

Number of pins

5 – five  
6 – six

\* indicates a composite keyway that accepts more than one key section. Example: Keyway 02 accepts both Sargent S and Sargent U keys.



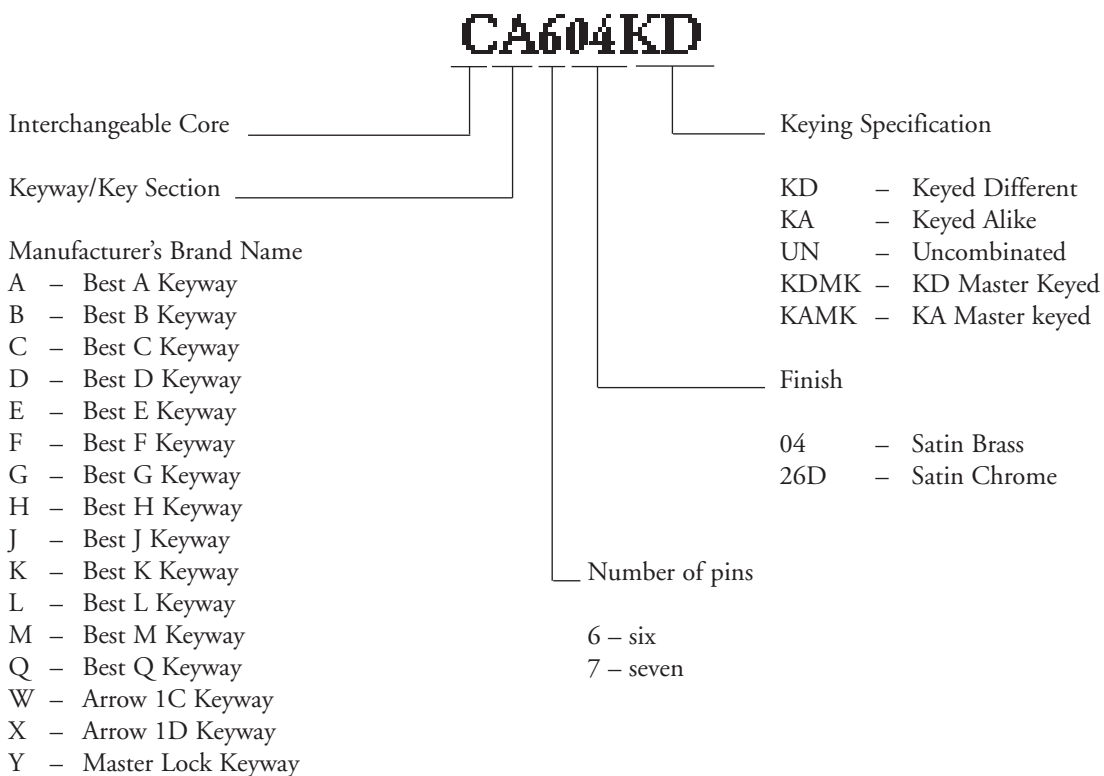
## Cylinders and Retainers *continued*

7. The Interchangeable Core cylinders are constructed to the SFIC standards that you encounter with many other brands. Keying uses the same techniques employed for those cylinders.

Master Lock offers IC cylinders keyed to existing key systems if you are able to supply the combinations for the operating key, the TMK (Top Master Key), and the Control key. Master Lock also has the ability to recreate your entire key system, including all potential expansion, if you can supply bitting combinations of all keys that have been used.



At present, Master Lock offers IC cylinders compatible with the A2 and A4 format from the factory. If you are equipped for pinning SFIC cylinders, you can key the cylinders into an existing A3 system without difficulty. The listing below allows construction of a correct IC cylinder part number when ordering from Master Lock.





# Cylinder Service Procedure

All ProSeries® locks are supplied with a six pin length cylinder for uniform keying capability. The ProSeries® cylinder may be combined with 4, 5, or 6 pins to accommodate existing key codes.

## CYLINDER

Pin chambers in this cylinder are drilled from the shell into the bible. Care should be exercised to avoid turning the plug 180° because, at that point, the bottom pins will align with the service holes on the bottom of the shell and could be lost.

1. The plug is held in the shell via a crimp in the end of the shell.  
This crimp prevents removal of the plug from the shell unless you have a Master Lock plug follower with a flat on it.
2. The bottom of the plug is undercut at the keyway to allow it to bypass the crimp. The Master Lock plug follower is designed to fit the end of the plug and automatically align with the crimp in the shell.
3. To remove the plug, turn it 90° counterclockwise and, with the special plug follower, push the plug from the shell.

Once you have changed the pinning combination, insert the plug into the shell.

Effective mid-2001, the crimp retainer is replaced with a new design E-clip. To service the new cylinder type, remove the E-clip and then follow step 3 above. This running change replacement will eliminate the crimped retainer for the plug in all ProSeries® 6000 and 7000 keyway cylinders. This new design cylinder will also be supplied with a new key design. The new keys will have radiused blade bottoms and the section stamping will include a suffix "B" for ease of identification (see page 15).



Rekeyable Cylinders					
No. of Pins	Keyway	Part Number by Cylinder Length			Keying
		4 Pin	5 Pin	6 Pin	
4	K1	295W1*	295W1*	296W1	KD
5	K15	N/A	295W15	296W15	KD
5	K17	N/A	295W17	296W17	KD
5	K27	N/A	295W27	296W27	KD
5	K81	N/A	295W81	296W81	KD
5	K600A	N/A	295W600	296W600A	KD
6	K700A	N/A	N/A	296W700A	KD
5	K6000	N/A	295W6000	296W6000	KD
6	K7000	N/A	N/A	296W7000	KD

\* Includes plug extension for 4 pin cylinder

NOTE: For KA or MK'd, insert that specification in front of the 'W' in the above part number.

For Zero Bitted, use suffix 'KZ' with above part number





# Keying

Master Lock keys are coded from bow to tip and with a few exceptions, the increment used is .0155". Master Lock keys will be encountered with two types of stamping on them. Both direct and blind codes are stamped on the keys for different products. In the 291 pin kit you will find the 290-0371 slip gauge for decoding keys. The "B" series of keys, 6000B and 7000B, use gauge 290-0373. For ProSeries® products, use the top slot in the gauge. Insert the key in the slot at the large end perpendicular to the gauge. Once inserted, pull the key toward the smaller end of the slot until it stops. The number stamped on the gauge directly below where the key stops is the cut depth for that cut position on the key. Repeat the process for each cut position on the key to determine the actual combination of the key.



The cylinder being rekeyed may be set to an existing key combination or it may be zero-bitted. In either case, follow the plug out of the shell and discard the existing pins from the plug. If the cylinder was Master Keyed, also remove any master pins that may have been retained in the shell. For the combination decoded, select the appropriate length pin from the 291 pinning kit, and install in the appropriate pin chamber of the plug. Once all pins have been installed, insert the plug into the shell and check for smoothness of operation. If you note roughness in the operation, check the key to be sure it has been produced to the bitting specifications on page 18.

## MASTER KEYING

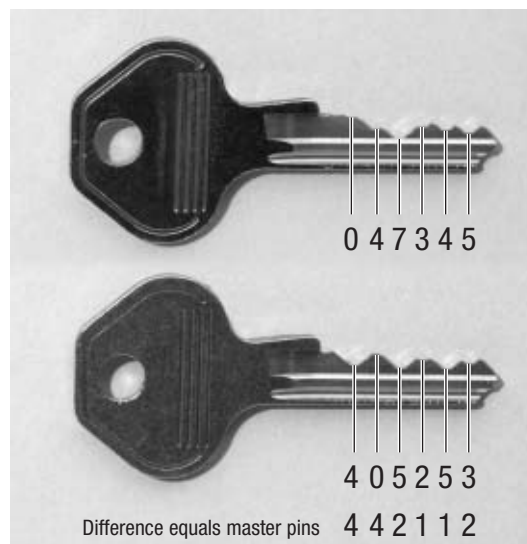
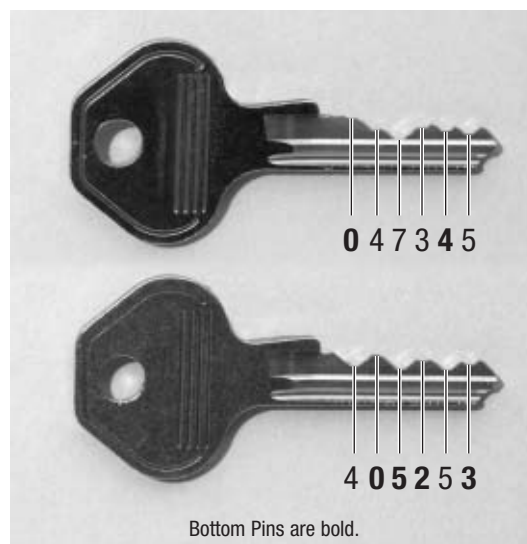
Most keying system software offers the option of providing a pinning chart. It is advisable to use that option. If the option is not available, the following example illustrates the procedure required to determine the pinning of a master keyed cylinder.

With the example master key combination of 047345 at right, and the change key combination of 405253, the first step is to figure out the bottom pins that you must install in the cylinder, then the required master pins must be determined.

Bottom pins must be selected to allow operation of the shallowest cut per position in the cylinder for either key. By comparing the two combinations, select the shallowest cut for each cut position from either key. In our example we have highlighted the shallowest cut depth, and you can see that our bottom pins for the cylinder will be 005243. The master pin sizes are determined by subtracting the shallowest cut depth from the deepest cut depth for each pin position in the lock. As noted in the example, the difference is 442112.

From this process, we know that in the first pin chamber we must have a number zero bottom pin and a number 4 master pin for both keys to operate. The illustration at the right shows the pinning for the master keyed cylinder example. Depending upon the size of your key system, you may or may not require master pinning in all of the pin chambers.

If you find that some cylinders require master pins in different pin chambers or if different cylinders require different quantities of pin chambers to have master pins, question the design of the system before proceeding. Having master pins in different pin chambers may indicate that the system utilizes a Rotating Constant Method of progression, which should be verified. Having different quantities of master pins in different cylinders usually indicates faulty key system design, and you should recommend that the system be replaced.





# ProSeries® Extensions and Retainers

## Extensions

As noted in the exploded views, all ProSeries® locks use an extension mechanism that causes the ball bearings to lock or unlock the shackle. Typically, ProSeries® locks are supplied with a NKR (Non Key Retaining) function extension. There are five different variations of the Generation I and II extension you may encounter as shown here.

There are two different versions of the extension and two sizes of each version. The different versions are referred to as Generation I and Generation II and the visible difference is where the projection on the spring washer is located. The two extensions on the right are the 8:00 o'clock Generation I types, the two on the left are the 12:00 o'clock Generation II types and the one in the middle is used in the 6230 lock only.

Both Generation I and II are available with two different sized cam ends, a smaller diameter size for the "30" model solid body locks and a larger diameter size for all others. See the padlock pages for specific part numbers. The picture shows the installation orientation difference between the 12:00 o'clock (left) and 8:00 o'clock (right) extensions.

There are three different extensions used for the NRK (Non Removable Key) function and they are shown here. Care should be taken to position them correctly within the lock assembly. Consult the padlock pages for specific part numbers.

Generation III solid body locks use a completely different design for the extension. Each extension is a three part assembly and detailed information may be found on each padlock page and page 8.

## Retainers

There are three different types of retainers used in ProSeries® locks. A 'C' shaped ring retainer can be found in the IC lock. It is a standard size and is used to position a retainer plate in the Generation I and II locks. The retainer plate isn't required in Generation III locks but the ring retainer is used in them to keep the extension in place.

In the door hardware compatible locks a Retainer Plug (PN 298-0629) is used to position the door hardware cylinder. The retainer plug us hardened to resist drilling.

A trap door, screw and nut are used to position the cylinder in all of the rekeyables. Spare trap doors are included in the 291 pinning kit. Two slightly different trap doors are used in the Generation I and II locks and have a general teardrop shape. The trap door used in Generation III locks is oval in shape.





# ProSeries® Door Hardware Cylinder Drivers

Because there are many different types of tails on door hardware cylinders and something is needed to transfer motion from the cylinder to the extension, there is an intermediate part called a driver. Positioning of the driver is important if it is to operate correctly. In the picture you can see the orientation the driver should have to the back of the cylinder, (Lori cylinder shown).

Drivers are required in all Generation I and II locks and there have typically been four available as shown in the diagram below.

The driver plate is used in any cylinder with a screw-on plug retainer to replace the regular tailpiece and provide a horizontal slot engaged by the new universal driver in Generation III locks which have the driver incorporated into the extension.

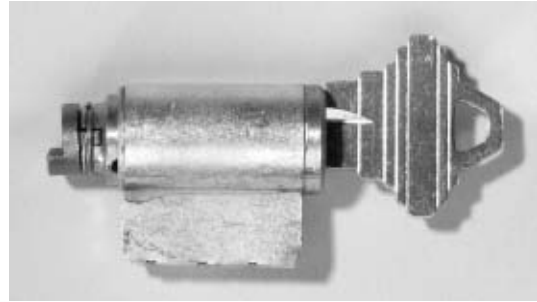
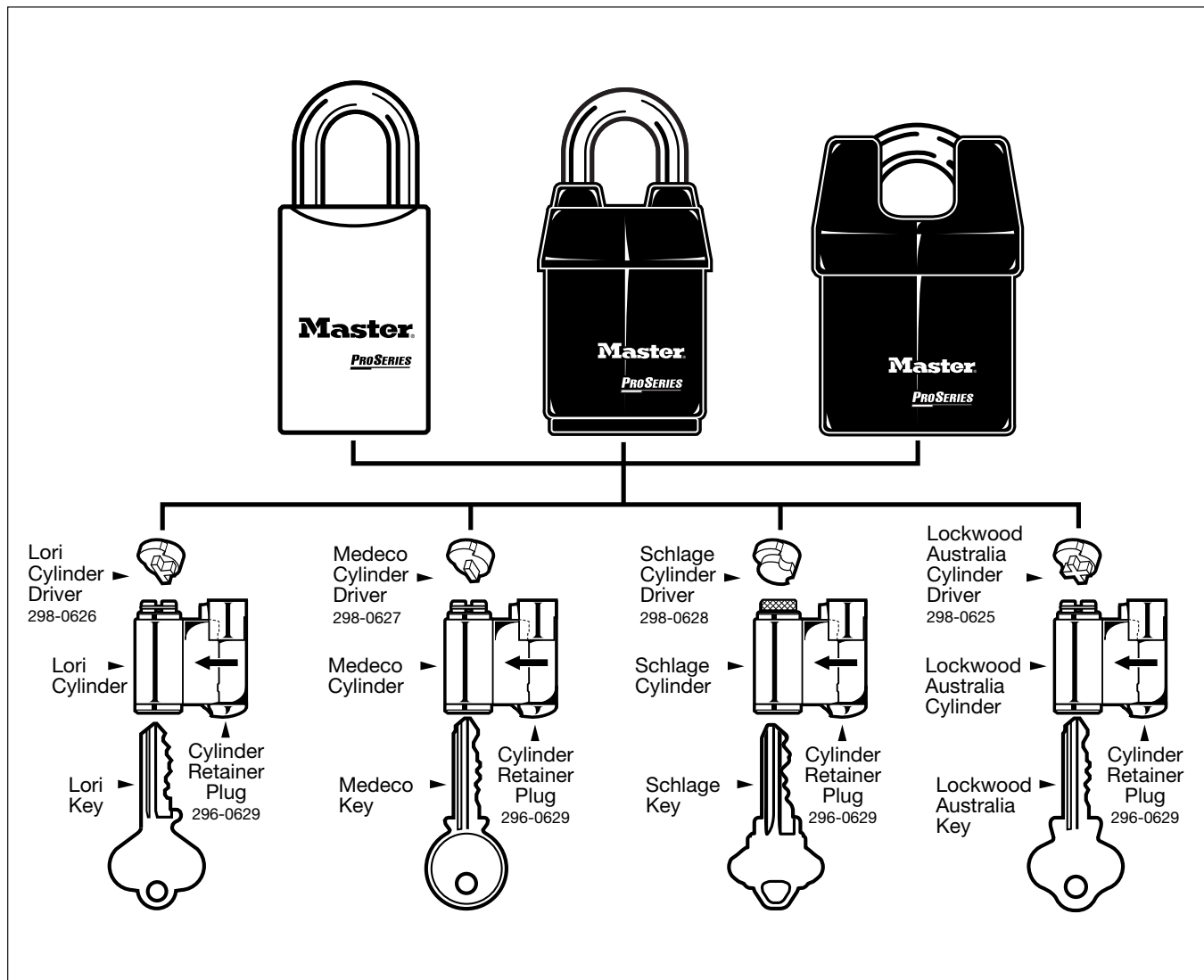


Photo to Come (5/10/02)

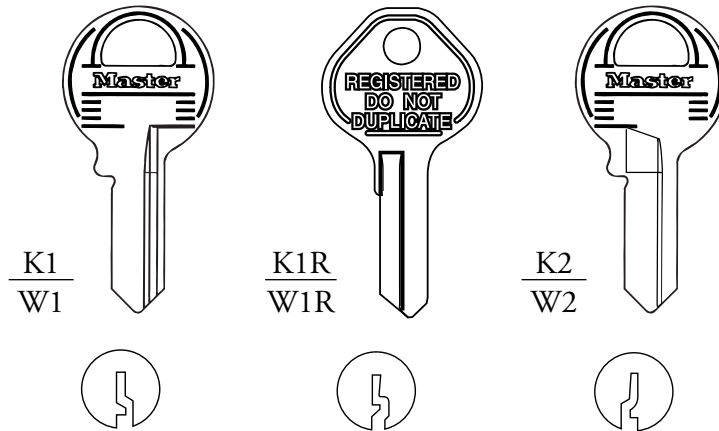




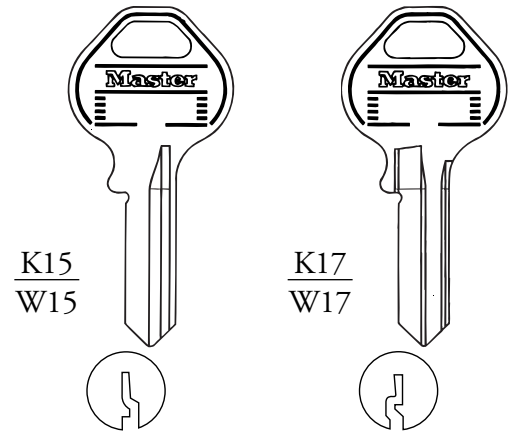
# Keys and Keyways

Master Lock uses a wide range of keys and keyways. Below illustrates the relationship of keys to keyways and the corresponding part numbers.

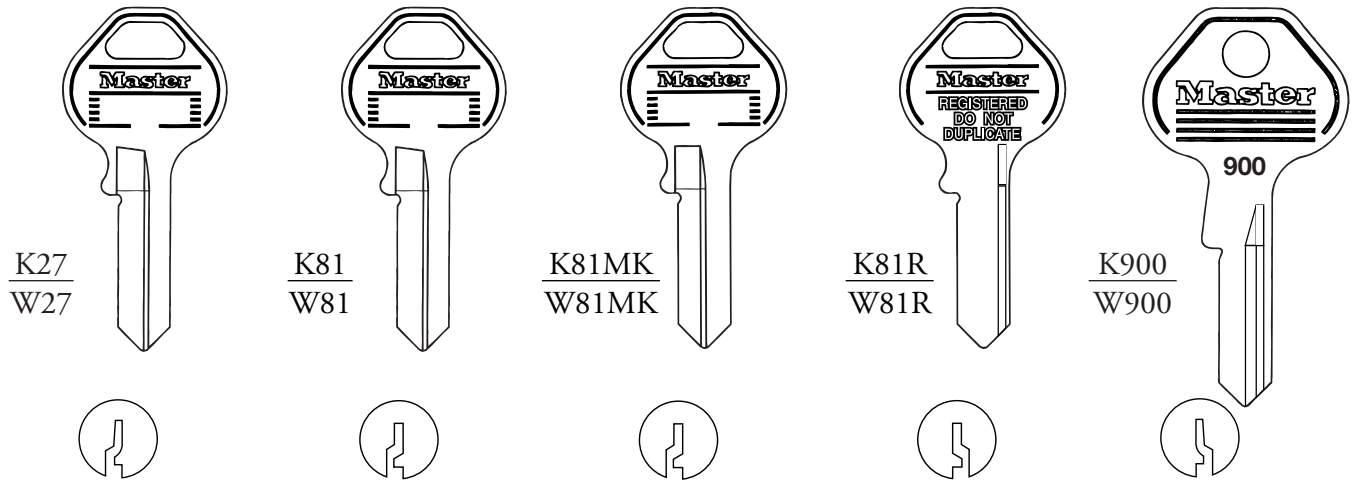
## Four Pin



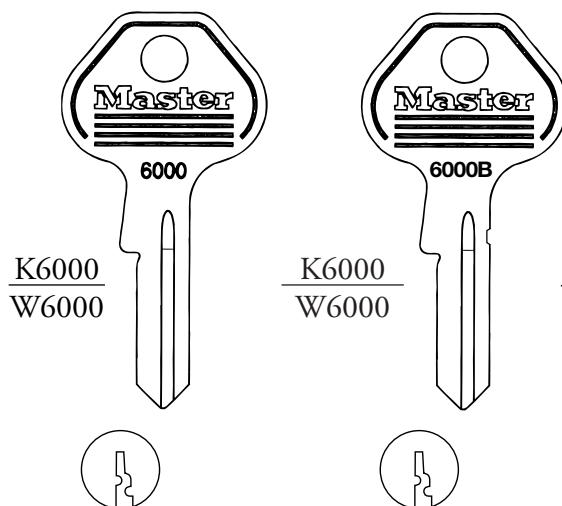
## Five Pin



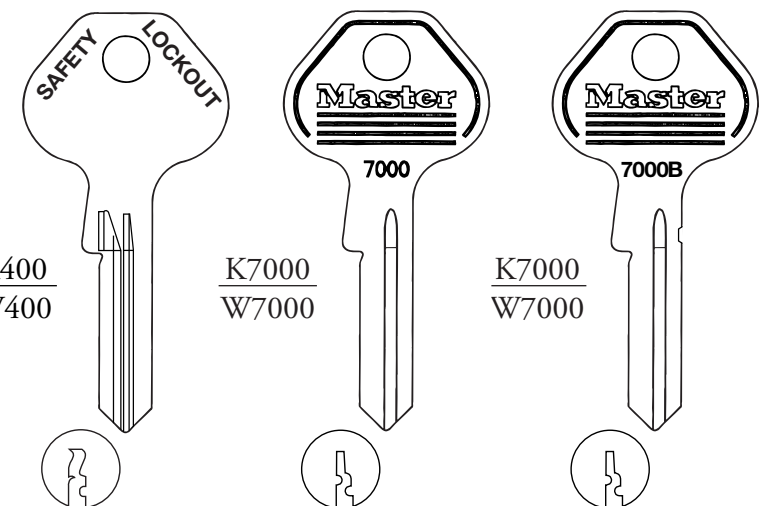
## Five Pin



## Five Pin



## Six Pin





## Bitting Specifications

Key Blank Part Number	Key Blank Width	Root Depth								Spacing Stop To First Cut	Spacing Cut To Cut	Used in Master Lock
		0	1	2	3	4	5	6	7			
1K	0.281	0.2720	0.2565	0.2410	0.2255	0.2100	0.1945	0.1790	0.1635	0.187	0.125	1, 2, 3, 4, 5, 6, 11, 77, 33, 34, 35, 36, 37, 39, 42, 5, 47, 5
2K	0.281	0.2720	0.2565	0.2410	0.2255	0.2100	0.1945	0.1790	0.1635	0.187	0.125	1MK, 2MK, 3MK, 4MK, 5MK, 6MK, 11MK
1RES	0.277	0.2770	0.2615	0.2460	0.2305	0.2150	0.1995	0.1840	0.1680	0.187	0.125	
7K	0.212	0.2120	0.1965	0.1810	0.1655	0.1500	0.1345	0.1190	NA	0.132	0.125	7, 8, 90, 716, 719
7RES	0.208	0.2080	0.1925	0.1770	0.1645	0.1460	0.1305	0.1150	NA	0.132	0.125	7, 8, 90
15K	0.272	0.2720	0.2565	0.2410	0.2255	0.2100	0.1945	0.1790	0.1635	0.187	0.125	15
17K	0.272	0.2720	0.2565	0.2410	0.2255	0.2100	0.1945	0.1790	0.1635	0.187	0.125	17
19K	0.374	0.3720	0.3470	0.3220	0.2970	0.2720	0.2470	0.2220	0.1970	0.218	0.156	19
27K	0.283	0.2720	0.2565	0.2410	0.2255	0.2100	0.1945	0.1790	0.1635	0.187	0.125	21, 24, 25, 27, 31, 101, 220, 230
52K	0.277	0.2720	0.2565	0.2410	0.2255	0.2100	0.1945	0.1790	0.1635	0.187	0.125	8179
81KR	0.283	0.2820	0.2665	0.2510	0.2355	0.2200	0.2045	0.1890	NA	0.187	0.125	50, 81, 82, 1710, 1714
81KM	0.283	0.2820	0.2665	0.2510	0.2355	0.2200	0.2045	0.1890	0.1735	0.187	0.125	81MK, 82MK, 1710MK, 1714MK
81RES	0.283	0.2740	0.2585	0.2430	0.2275	0.2120	0.1965	0.1810	0.1655	0.187	0.125	
120K	0.200	NA	0.1950	0.1750	0.1550	0.1350	NA	NA	NA	0.132	0.12	120
130K	0.270	0.2700	0.2400	0.2100	0.1800	0.1500	0.1200	NA	NA	0.132	0.12	130, 140
150K	0.270	0.2700	0.2400	0.2100	0.1800	0.1500	0.1200	NA	NA	0.150	0.129	150, 160
600K	0.308	0.2840	0.2684	0.2528	0.2372	0.2215	0.2059	0.1903	0.1747	0.159	0.125	220, 230 w/American cylinder
700K	0.308	0.2840	0.2684	0.2528	0.2372	0.2215	0.2059	0.1903	0.1747	0.159	0.125	All Pro Series® w/American cylinder
900K	0.272	0.2720	0.2565	0.2410	0.2255	0.2100	0.1945	0.1790	0.1635	0.187	0.125	Retail Contractor Grade
6000K	0.283	0.2710	0.2555	0.2400	0.2245	0.2090	0.1935	0.1780	0.1625	0.187	0.125	All Pro Series® 5 Pin cylinder
7000K	0.283	0.2710	0.2555	0.2400	0.2245	0.2090	0.1935	0.1780	0.1625	0.187	0.125	All Pro Series® 6 Pin cylinder
Keys with Radiused Blade Bottom (stamped 6000B and 7000B) Effective August, 2001												
6000K	0.290	0.2845	0.2690	0.2535	0.2380	0.2225	0.2070	0.1915	0.1760	0.187	0.125	All Pro Series® 5 Pin cylinder
7000K	0.290	0.2845	0.2690	0.2535	0.2380	0.2225	0.2070	0.1915	0.1760	0.187	0.125	All Pro Series® 6 Pin cylinder



# Tools

The 291 Pin Kit includes all tumbler and driver pins needed to repin Master Lock rekeyable padlocks (not IC or Door Hardware pins though). It also includes several tools to assist in rekeying the cylinder.



## Parts included in 291 Rekeying Kit

### Key Cut Gauges

290-0371 for all keys but 6000B and 7000B

290-0373 for 6000B and 7000B keys

### Cylinder Assembly Tool

290-0372 Follower

### Hex Wrenches

3/32"

7/64"

1.5mm for 6270 & 6270 not included (purchase locally if needed)

### Trap Doors

21-0372 for 21, 24, 101 padlocks

27-0371 for 27 padlock

6121-0420 for many Pro Series

6830-0023 for many Pro Series

Also includes a wide assortment of retaining nuts, springs and pins for rekeyable padlocks.





# Terminology

When making a definition of a term, the following rules were applied to the term:

1. Is the term listed in a standard dictionary?
2. Is the definition there the same meaning used in our industry?

A standard pocket dictionary can be obtained easily and on short notice from a variety of stores that have a pocket book display. If the answer to either of the questions above is no, then the definition of the term may be found here.

A definition must meet the following rules:

1. It must describe the subject of the term without graphics.
2. It must describe ONLY the subject of the term.
3. The term should not be used in the definition.

If you have a technical objection to any definition, please bring it to the attention of a member of the LIST Council for review.

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## -A-

**actuator** n. a device, usually connected to a cylinder, which, when activated, may cause a lock mechanism to operate

**ADA** abb. Americans with Disabilities Act

**adjustable mortise cylinder** n. any mortise cylinder whose length can be adjusted for a better fit in doors of varying thickness

**all-section key blank** n. the key section which enters all keyways of a multiplex key system

**ALOA** abb. Associated Locksmiths of America, Inc.

**associated change key** n. a change key which is related directly to particular master key(s) through the use of constant cuts

**associated master key** n. a master key which has particular change keys related directly to its combination through the use of constant cuts

**ASTM** abb. American Society for Testing and Materials

**auxiliary lock** n. any lock installed in addition to the primary lockset

## -B-

**ball locking** adj. a method of locking a padlock shackle into its case using ball bearing(s) as the bolt(s)

**battery eliminator** n. an electric device designed to provide energy to equipment normally requiring batteries for operation

**bible** n. that portion of the cylinder shell which normally houses the pin chambers, especially those of a key-in-knob cylinder or certain rim cylinders

**bicycle padlock** n. a padlock with sufficient shackle clearance to secure a bicycle

**bi-directional cylinder** n. a cylinder which may be operated in a clockwise and counterclockwise direction by a single key

**binary cut key** n. a key whose combination only allows for two possibilities in each biting position: cut/no cut

**binary type cylinder or lock** n. a cylinder or lock whose combination only allows for two biting possibilities in each biting position

**bit** n. the part of the key which serves as the blade, usually for use in a warded or lever tumbler lock v. to cut a key

**bit key** n. a key with one or more projecting bits

**biting** n. 1. the number(s) which represent(s) the dimensions of the key 2. the actual cut(s) or combination of a key

**biting depth** n. the depth of a cut which is made into the blade of a key

**biting list** n. a listing of all the key combinations used within a system. The combinations are usually arranged in order of the blind code, direct code, and/or key symbol.

**biting position** n. the location of a key cut

**blade** n. the portion of a key which may contain the cuts and/or millings

**blank** adj. uncut, see also "key blank"

**blind code** n. a designation, unrelated to the biting, assigned to a particular key combination for future reference when additional keys or cylinders may be needed

**block master key** n. the one pin master key for all combinations listed as a block in the standard progression format

**BMK** abb. block master key

**bolt** n. any movable projection which blocks the movement of one object relative to another

**bottom of blade** n. the portion of the blade opposite the cut edge of a single bitted key

**bottom pin** n. usually a cylindrical shaped tumbler which may be conical, ball shaped or chisel pointed on the end which makes contact with the key

**bow** n. the portion of the key which serves as a grip or handle

**bow stop** n. a type of stop located near the key bow

**box of wards** n. a complete unit of intricate wards installed in or on a lock case

**bridge ward** n. a center ward attached to the interior of a lock by means of a bracket

**broach** n. a tool used to cut the keyway into the cylinder plug v. to cut the keyway into a cylinder plug with a broach

**build-up dimension** n. 1. the distance between two different shear lines, as expressed in units of the manufacturer's increment or as an actual measurement 2. the dimension of the build-up pin required in a particular chamber, which will allow one key to operate at the plug shear line and a different key to operate at a different shear line

**build-up pin** n. the additional element of a pin stack required to allow operation at different shear lines in a cylinder

**by-pass tool** n. a device that neutralizes the security of a locking device, or its application hardware, often taking advantage of a design weakness

## -C-

**cam** n. 1. a lock or cylinder component which transfers the rotational motion of a key or cylinder plug to the bolt works of a lock 2. the bolt of a cam lock

**cam lock** n. a complete locking assembly in the form of a cylinder whose cam is the actual locking bolt

**cap** n. 1. a spring cover for a single pin chamber 2. a part which may serve as a plug retainer and/or a holder for the tailpiece v. to install a cap



# Terminology

**capping block** n. a holding fixture for certain interchangeable cores which aids in the installation of the caps

**case** n. the housing or body of a lock

**case ward** n. any ward directly attached to or projecting from a lock case

**chamber** n. any cavity in a cylinder plug and/or shell which houses the tumblers

**change key** n. a key which operates only one cylinder or one group of keyed alike cylinders in a keying system, see also "reset key" definition 1

**changeable bit key** n. a key which can be recombined by exchanging and/or rearranging portions of its bit or blade

**Chubb shackle** n. a hinged shackle with a pierced hole for the bolt in its movable end

**CK** abb. 1. change key 2. control key

**devis** n. a device to permanently attach a chain to a padlock

**dipper** n. a hand held key biting punch, often incorporating a triggerlike handle

**closed gated** adj. pertaining to a lever tumbler whose gate is pierced into the body of the tumbler. The lever(s) surround the fence in both the locked and unlocked positions.

**dutch** n. that part of a profile cylinder which transfers rotational motion from the inside or outside element to a common cam or actuator

**CML** abb. the title "Certified Master Locksmith" as awarded by ALOA

**code** n. a designation assigned to a particular key combination for reference when additional keys or cylinders may be needed. See also, "blind code", "direct code", and "key symbol"

**code key** n. a key cut to a specific code rather than duplicated from a pattern key. It may or may not conform to the lock manufacturer's specifications

**code original key** n. a code key which conforms to the lock manufacturer's specifications

**combine** v. to set a combination in a lock, cylinder, or key

**combination** n. the group of numbers which represent the biting of a key and/or the tumblers of a lock or cylinder

**compensate drivers** v. to select longer or shorter top pins, depending on the length of the rest of the pin stack, in order to achieve a uniform pin stack height

**complementary keyway** n. usually a disc tumbler keyway used in master keying. It accepts keys of different sections whose blades contact different bearing surfaces of the tumblers.

**composite keyway** n. a keyway which has been enlarged to accept more than one key section, often key sections of more than one manufacturer

**compound bitted key** n. a key with at least one compound cut

**compound cut** n. a biting which has another biting dimension within its dimensions

**constant cut** n. any biting(s) which are identical in corresponding positions from one key to another in a keying system. They usually serve to group these keys together within a given level of keying, and/or link them with keys of other levels. See also "rotating constant"

**construction core** n. an interchangeable or removable core designed for use during the construction phase of a building. The cores are normally keyed alike and, upon completion of construction, they are to be replaced by the permanent system's cores.

**control chamber** n. in an interchangeable or removable core, any chamber which has a control shear line, which is different from the operating shear line

**control cut** n. any biting which operates the retaining device of an interchangeable or removable core

**control key** n. 1. a key whose only purpose is to remove and/or install an interchangeable or removable core 2. a bypass key used to operate and/or reset some combination type locks 3. a key which allows disassembly of some removable cylinder locks

**control lug** n. that part of an interchangeable or removable core-retaining device which locks the core into its housing

**control shear line** n. the shear line which allows operation of the control lug of an interchangeable or removable core

**control sleeve** n. the part of an interchangeable or removable core retaining device which surrounds the plug

**controlled cross keying** a condition in which two or more different keys of the same level of keying and under the same higher level key(s) operate one cylinder by design; e.g., XAA1 operated by AA2 (but not XAA1 operated by AB1)  
Note: This condition could severely limit the security of the cylinder and the maximum expansion of the system when (1) more than a few of these different keys operate a cylinder, or (2) more than a few differently cross keyed cylinders per system are required.

**core** n. a complete unit, often with a "figure eight" shape, which usually consists of the plug, shell, tumblers, springs, plug retainer and spring cover(s). It is primarily used in removable and interchangeable core cylinders and locks.

**CPL** abb. the title "Certified Professional Locksmith" as awarded by ALOA

**CRL** abb. the title "Certified Registered Locksmith" as awarded by ALOA

**cross keying** n. the deliberate process of combining a cylinder (usually in a master key system) to two or more different keys which would not normally be expected to operate it together. See also "controlled cross keying" and "uncontrolled cross keying."

**cruciform** adj. of or pertaining to a key section or keyway which usually resembles a plus sign (+) or the letter "X"

**cut** v. to make cuts into a key blade, see also "key cut(s)"

**cut edge** n. the portion of the key blade which contains the cuts

**cut key** n. a key which has been bitted or combined

**cut root** n. the bottom of a key cut

**cut root shape** n. the shape of the bottom of a key cut. It may have a flat or radius of a specific dimension, or be a perfect "V"

**cutter** n. the part of a key machine which makes the cuts into the key blank

**cylinder** n. a complete operating unit which usually consists of the plug shell, tumblers, springs, plug retainer, a cam/tailpiece or other actuating device, and all other necessary operating parts

**cylinder blank** n. a dummy cylinder which has a solid face and no operating parts

**cylinder collar** n. a plate or ring installed under the head of a cylinder to improve appearance and/or security

**cylinder guard** n. a protective cylinder mounting device

**cylinder key** n. a broad generic term including virtually all pin and disc tumbler keys

## -D-

**deadbolt** n. a bolt, which requires a deliberate action to extend, and which resists end pressure in the unlocking direction when fully extended

**deadlock** n. a lock which incorporates a deadbolt



# Terminology

**deadlocking** adj. pertaining to any feature which, when fully engaged, resists attempts to move the latch or bolt in the unlocking direction through direct pressure

**declining step key** n. a key whose outs are progressively deeper from bow to tip

**decode** v. to determine a key combination by physical measurement of a key and/or cylinder parts

**decoder gauge** n. a measuring device which helps determine the combination of a lock or cylinder without removing the tumblers

**depth key set** n. a set of keys used to make a code original key on a key duplicating machine to a lock manufacturer's given set of key bitting specifications. Each key is cut with the correct spacing to one depth only in all bitting positions, with one key for each depth.

**derived series** n. a series of blind codes and bittings which are directly related to those of another bitting list

**direct code** n. a designation assigned to a particular key which includes the actual combination of the key

**disc tumbler** n. 1. a flat tumbler which must be drawn into the cylinder plug by the proper key so that none of its extremities extends into the shell  
2. a flat, usually rectangular tumbler with a gate which must be aligned with a sidebar by the proper key

**double-acting lever tumbler** n. one that must be lifted a precise amount, neither too little nor too much to allow movement of a bolt

**double bitted key** n. a key bitted on two opposite surfaces

**double pin** v. to place more than one master pin in a single pin chamber

**drilled key** n. a type of bit key with a hole drilled into the shank from the tip

**driver spring** n. a spring placed on top of the pin stack to exert pressure on the pin tumblers

**drop** n. a pivoting or swinging dust cover, see also "increment"

**dummy cylinder** n. a non-functional facsimile of a rim or mortise cylinder used for appearance only, usually to conceal a cylinder hole

**duplicate** v. to copy, see also "duplicate key"

**duplicate key** n. any key reproduced from a pattern key

**duproof cylinder** n. a cylinder designed to prevent foreign matter from entering either end of the keyway

## -E-

**effective plug diameter** n. the dimension obtained by adding the root depth of a key cut to the length of its corresponding bottom pin which establishes a perfect shear line. This will not necessarily be the same as the actual plug diameter.

**ejector hole** n. a hole found on the bottom of certain interchangeable cores under each pin chamber. It provides a path for the ejector pin.

**ejector pin** n. a tool used to drive all the elements of a pin chamber out of certain interchangeable cores

**electrified lockset** n. a lock which is controlled electrically

**end ward** n. a ward which prevents complete insertion and/or rotation of an incorrect key by forming an obstruction to the end of the key

**end ward cut** n. any cut made into a key to bypass an end ward

## -F-

**factory original key** n. the out key furnished by the lock manufacturer for a lock or cylinder

**fail-safe** adj. a feature of a security device designed to release, for safety purposes, during a power loss

**fence** n. 1. a projection on a lock bolt which prevents movement of the bolt unless it can enter gates of properly aligned tumblers, see also "sidebar"  
2. any locking element other than a sidebar or shackle designed to enter a tumbler's gate

**file cabinet lock** n. 1. any lock used on a file cabinet  
2. a plunger lock cylinder for a gang lock normally used in a file cabinet

**finish** n. a material, coloring and/or texturing specification

**first generation duplicate** n. a key which was duplicated using a factory original key or a code original key as a pattern

**first key** n. any key produced without the use of a pattern key

**five column progression** n. a process wherein key bittings are obtained by using the cut possibilities in five columns of the key bitting array

**five pin master key** n. a master key for all combinations obtained by progressing five bitting positions

**flat type key** n. a key which is completely flat on both sides, usually used for warded or lever tumbler locks

**flexible head mortise cylinder** n. an adjustable mortise cylinder which can be extended against spring pressure to a slightly longer length

**foot** n. the cam portion of the trunnion assembly in some lever tumbler locks

**four column progression** n. a process wherein key bittings are obtained by using the cut possibilities in four columns of the key bitting array

**four pin master key** n. a master key for all combinations obtained by progressing four bitting positions

**frangible shackle** n. a padlock shackle designed to be broken easily

**frangible shackle padlock** n. a padlock equipped with an easily broken shackle

## -G-

**gate** n. a notch cut into the edge of a tumbler to accept a fence or sidebar

**GGMK** abb. great great grand master key

**GGMK'D** abb. great great grand master keyed

**GGM** abb. great grand master key

**GGMK** abb. great grand master key

**GGMK'D** abb. great grand master keyed

**GM** abb. grand master key

**GMK'D** abb. grand master keyed

**graduated drivers** n. a set of top pins of different lengths. Usage is based on the height of the rest of the pin stack, in order to achieve a uniform pin stack height. See also "compensate drivers"

**grand master key** n. the key which operates two or more separate groups of locks, which are each operated by a different master key

**grand master key system** n. a master key system which has exactly three levels of keying

**grand master keyed** adj. of or pertaining to a lock or cylinder which is or is to be keyed into a grand master key system

**great grand master key** n. the key which operates two or more separate groups of locks which are each operated by a different grand master key

**great grand master key system** n. a master key system which has exactly four levels of keying

**great grand master keyed** adj. of or pertaining to a lock or cylinder which is or is to be keyed into a great grand master key system

**great great grand master key** n. the key which operates two or more separate groups of locks which are each operated by different great grand master keys



# Terminology

**great great grand master key system** n. a master key system which has five or more levels of keying

**great great grand master keyed** adj. of or pertaining to a lock or cylinder which is or is to be keyed into a great great grand master key system

**guide** n. 1. that part of a key machine which follows the cuts of a pattern key or template during duplication 2. that part of a flat key lever lock which connects the nose to the foot and supports the key blade

## -H-

**hand change** adj. pertaining to a combination lock in which the wheels must be removed in order to change the combination

**handed** adj. pertaining to hardware which is manufactured only for application on doors with a specific orientation

**hardware schedule** n. a listing of the door hardware used on a particular job it includes the types of hardware, manufacturers, locations, finishes, and sizes. It should include a keying schedule specifying how each locking device is to be keyed.

**harp** n. a hinged metal strap designed to be passed over a staple and secured in place

**heel & toe locking** n. describes a padlock which has locking dogs at both the heel and toe of the shackle

**heel (of a padlock shackle)** n. the part of a padlock shackle which is retained in the case when in the unlocked position

**HGM** abb. horizontal group master key

**high security cylinder** n. a cylinder which offers a greater degree of resistance to any or all of the following: picking, impressioning, key duplication, drilling or other forms of forcible entry

**high security key** n. a key for a high security cylinder

**hinged shackle** n. a shackle whose heel is permanently mounted to the padlock case in a manner which allows the shackle to pivot to open

**Hobbs shackle** n. a hinged shackle with a notch for the bolt in its movable end

**holding fixture** n. a device which holds cylinder plugs, cylinders, housings, and/or cores to facilitate the installation of tumblers, springs and/or spring covers

**hollow driver** n. a top pin hollowed out on one end to receive the spring, typically used in cylinders with extremely limited clearance in the pin chambers

**hook bolt** n. a lock bolt shaped in the general outline of a hook. Normally used on sliding doors or where spreading of the frame and door is a possible attack.

**horizontal group master key** n. the two pin master key for all combinations listed in all blocks in a line across the page in the standard progression format

**horn** n. in a non-cylinder lock, the housing which surrounds the nose and extends through the door or drawer

**horn plate** n. the cover of a lever tumbler lock case to which the horn is attached

**housing** n. that part of a locking device which is designed to hold a core

**hub** n. a lock component, which redirects rotational motion from a spindle or shaft to linear movement of a latch or bolt

## -I-

**IC** abb. interchangeable core

**impression** n. the mark made by a tumbler on its key cut v. to fit a key by the impression technique

**impression technique** n. a means of fitting a key directly to a locked cylinder by manipulating a blank in the keyway and cutting the blank where the tumblers have made marks

**incidental master key** n. a key cut to an unplanned shear line created when the cylinder is combined to the top master key and a change key

**increment** n. a usually uniform increase or decrease in the successive depths of a key cut which must be matched by a corresponding change in the tumblers

**index (of a combination lock dial)** n. the mark outside the dial ring of a combination lock used as a reference point

**individual key** n. an operating key for a lock or cylinder which is not part of a keying system, see also "change key" definition 1

**interchangeable core** n. a key removable core which can be used in all or most of the core manufacturer's product line. No tools (other than the control key) are required for removal of the core.

## -K-

**k** sym. symbol for "keys" used after a numerical designation of the quantity of the keys requested to be supplied with the cylinders; e.g., 1k, 2k, 3k, etc. it is usually found in hardware/keying schedules.

**KA** abb. keyed alike

**KA1, KA2, etc.** symbol which indicates that all cylinders so designated are or are to be operated by the same key(s). The numerical designation indicates the keyed alike group or set.

**KA/2, KA/3, etc.** symbol used to indicate the quantity of locks or cylinders in keyed alike groups. These groups are usually formed from a larger quantity; e.g., 30 cylinders KA/2.

**KBA** abb. key biting array

**KD** abb. keyed different

**key** n. a properly combined device which is, or most closely resembles, the device specifically intended by the lock manufacturer to operate the corresponding lock

**key biting array** n. a matrix (graphic) display of all possible bittings for change keys and master keys as related to the top master key

**key biting punch** n. a manually operated device which stamps or punches the cuts into the key blade, rather than grinding or milling them

**key biting specifications** n. pl. the technical data required to bit a given (family of) key blank(s) to the lock manufacturer's dimensions

**key blank** n. any material manufactured to the proper size and configuration which allows its entry into the keyway of a specific locking device. A key blank has not yet been combined or cut.

**key change** adj. referring to a lock in which the combination can be changed through the use of a special key or tool without disassembling the lock

**key changeable** adj. of or pertaining to a lock or cylinder which can be recombined without disassembly, by the use of a key. The use of a tool may also be required.

**key coding machine** n. a key machine designed for the production of code keys. It may or may not also serve as a duplicating machine.

**key control** n. 1. any method or procedure which limits unauthorized acquisition of a key and/or controls distribution of authorized keys 2. a systematic organization of keys and key records

**key cut(s)** n. the portion of the key blade which remains after being cut and which aligns the tumbler(s)

**key cut profile** n. the shape of a key cut, including the cut angle and the out root shape

**key duplicating machine** n. a key machine which is designed to make copies from a pattern key

**key gauge** n. a usually flat device with a cutaway portion indexed with a given set of depth or spacing specifications. It is used to help determine the combination of a key.

**key-in-knob cylinder** n. a cylinder used in a key-in-knob lockset

**key interchange** n. an undesirable condition, usually in a master key system, whereby a key unintentionally operates a cylinder or lock



# Terminology

**key machine** n. any machine designed to cut keys. See also "key coding machine" and "key duplicating machine."

**key manipulation** n. manipulation of an incorrect key in order to operate a lock or cylinder

**key milling** n. the grooves machined into the length of the key blade to allow its entry into the keyway

**key override** n. a provision allowing interruption or circumvention of normal operation of a combination lock or electrical device adj. of or pertaining to such a provision, as in "key override cylinder"

**key override cylinder** n. a lock cylinder installed in a device to provide a key override function

**key pull(s)** n. a lock specification which indicates by quantity and orientation the position(s) in which a key may be withdrawn

**key pull position** n. any position, of the cylinder plug at which the key can be removed

**key records** n. pl. records which typically include some or all of the following: biting list, key biting array, key system schematic, end user, number of keys/cylinders issued, names of persons to whom keys were issued, hardware/keying schedule

**Key Records Department** n. the department which is responsible for generating and issuing all lock and key combinations and maintaining records of them

**key retaining** adj. 1. of or pertaining to a lock which must be locked before its key can be removed. 2. of or pertaining to a cylinder or lock which may prevent removal of a key without the use of an additional key and/or tool

**key section** n. the exact cross sectional configuration of a key blade as viewed from the bow toward the tip

**key symbol** n. a designation used for a key combination in the standard key coding system, e.g., A, AA, AA1, etc.

**key system schematic** n. a drawing with blocks utilizing keying symbols, usually illustrating the hierarchy of all keys within a master key system. It indicates the structure and total expansion of the system.

**keyed** adj. 1. combined 2. having provision for operation by key

**keyed alike** adj. of or pertaining to two or more locks or cylinders which have or are to have the same combination. They may or may not be part of a keying system.

**keyed different** adj. of or pertaining to a group of locks or cylinders, each of which is or is to be combined differently from the others. They may or may not be part of a keying system.

**keyed random** adj. of or pertaining to a cylinder or group of cylinders selected from a limited inventory of different key changes. Duplicate bittings may occur.

**keyhole** n. the opening through which a non-cylinder key must pass to enter a lock

**keying** n. any specification for how a cylinder or group of cylinders are or are to be combined in order to control access

**keying conference** n. a meeting of the end user and the keying system supplier at which the keying and levels of keying, including future expansion, are determined and specified

**keying kit** n. a compartmented container which holds an assortment of tumblers, springs and/or other parts

**keying schedule** n. a detailed specification of the keying system listing how all cylinders are to be keyed and the quantities, markings, and shipping instructions of all keys and/or cylinders to be provided

**keying symbol** n. a designation used for a lock or cylinder combination in the standard key coding system; e.g., AA1, XAA1, XIX, etc.

**keyway** n. 1. the opening in a lock or cylinder which is shaped to accept key bit or blade of a proper configuration 2. the exact cross sectional configuration of a keyway as viewed from the front. It is not necessarily the same as the key section.

**keyway ward** n. a ward which prevents entry of an incorrect key into a cylinder or lock

**KR** abb. 1. keyed random 2. key retaining

**KWY** abb. keyway

## -L-

**laminated padlock** n. a padlock whose case is constructed of separate plates usually riveted together

**layout tray** n. a compartmented container used to organize cylinder parts during keying or servicing

**levels of keying** n. pl. the divisions of a master key system into hierarchies of access, as shown in the following tables. Note: the standard key coding system has been expanded to include key symbols for systems of more than four levels of keying.

TWO LEVEL SYSTEM			
Level of Keying	Key Name	ABB.	Key Symbol
Level II	master key	MK	AA
Level I	change key	CK	1AA, 2AA, etc.

THREE LEVEL SYSTEM			
Level of Keying	Key Name	ABB.	Key Symbol
Level III	grand master key	GMK	A
Level II	master key	MK	AA, AB, etc.
Level I	change key	CK	AA1, AA2, etc.

FOUR LEVEL SYSTEM			
Level of Keying	Key Name	ABB.	Key Symbol
Level IV	great grand master key	GGMK	GGMK
Level III	grand master key	GMK	A, B, etc.
Level II	master key	MK	AA, AB, etc.
Level I	change key	CK	AA1, AA2, etc.

FIVE LEVEL SYSTEM			
Level of Keying	Key Name	ABB.	Key Symbol
Level V	great great grand master key	GGGMK	GGGMK
Level IV	great grand master key	GGMK	A, B, etc.
Level III	grand master key	GMK	AA, AB, etc.
Level II	master key	MK	AAA, AAB, etc.
Level I	change key	CK	AAA1, AAA2, etc.

SIX LEVEL SYSTEM			
Level of Keying	Key Name	ABB.	Key Symbol
Level VI	great great grand master key	GGGMK	GGGMK
Level V	great grand master key	GGMK	A, B, etc.
Level IV	grand master key	GMK	AA, AB, etc.
Level III	master key	MK	AAA, AAB, etc.
Level II	sub-master key	SMK	AAAA, AAAB, etc.
Level I	change key	CK	AAAA1, AAAA2, etc.





# Terminology

**lever pack** n. a set of lever tumblers

**lever tumbler** n. a flat, spring-loaded tumbler which usually pivots on a post. It contains a gate which must be aligned with a fence to allow movement of the bolt.

**loading tool** n. a tool which aids installation of cylinder components into the cylinder shell

**lock** n. any device which prevents access or use by requiring special knowledge or equipment

**lock service package** n. a kit offered by the manufacturer or distributor of a product, which contains what he deems required to properly service the product

**locker lock** n. a cabinet lock designed specifically for use on lockers

**lockout** n. any situation in which the normal operation of a lock or cylinder is prevented

**lockout key** n. a key made in two pieces. One piece is trapped in the keyway by the tumblers when inserted and blocks entry of any regular key. The second piece is used to remove the first piece.

**locksmith** n. a person with the knowledge and ability to select, install, service and bypass all the components of an electrical or mechanical lock

## -M-

**MACS** abb. maximum adjacent cut specification

**manipulation key** n. any key other than a correct key which can be variably positioned and/or manipulated in a keyway to operate a lock or cylinder

**master disc** n. a special disc tumbler with multiple gates to receive a sidebar, see also "master pin" definition 1, see also "stepped tumbler".

**master key** n. a key which operates all the master keyed locks or cylinders in a group, each lock or cylinder usually operated by its own change key v. to combine a group of locks or cylinders such that each is operated by its own change key as well as by a master key for the entire group

**master key changes** n. the number of different usable change keys available under a given master key

**master key system** n. 1. any keying arrangement which has two or more levels of keying 2. a keying arrangement which has exactly two levels of keying

**master keyed** adj. of or pertaining to a cylinder or group of cylinders which are or are to be combined so that all may be operated by their own change key(s) and by additional key(s) known as master key(s)

**master keyed only** adj. of or pertaining to a lock or cylinder which is or is to be combined only to a master key

**master lever** n. a lever tumbler which can align some or all other levers in its lock so that their gates are at the fence. It is typically used in locker locks.

**master pin** n. 1. usually a cylindrical shaped tumbler, flat on both ends, placed between the top and bottom pin to create an additional shear line 2. a pin tumbler with multiple gates to accept a sidebar

**master wafer** n. a ward used in certain binary type disc tumbler key-in-knob locks, see also "master pin" definition 1, see also "stepped tumbler"

**matrix format master keying** n. a method of generating combinations and assigning key symbols in a master key system through the use of a matrix

**maximum adjacent cut specification** n. the maximum allowable difference between adjacent cut depths

**meter lock** n. 1. a padlock whose shackle consists of a single removable post, designed for locking utility meters or valves. 2. any of several small devices specifically designed to lock utility meters or valves and which require either a key or special wrench for removal.

**mis-cut** adj. of or pertaining to a key which has been cut incorrectly n. a mis-cut key

**MK** abb. master key

**MK'd** abb. master keyed

**MK'd only** abb. master keyed only

**mogul cylinder** n. a very large pin tumbler cylinder whose pins, springs, key, etc. are also proportionally increased in size. It is frequently used in prison locks.

**mortise cylinder** n. a threaded cylinder typically used in mortise locks of American manufacture

**multi-section key blank** n. a key section which enters more than one, but not all keyways in a multiplex key system

**multiple gating** n. a means of master keying by providing a tumbler with more than one gate

**multiplex key blank** n. any key blank which is part of a multiplex key system

**multiplex key system** n. 1. a series of different key sections which may be used to expand a master key system by repeating bittings on additional key sections. The keys of one key section will not enter the keyway of another key section. This type of system always includes another key section which will enter more than one, or all of the keyways. 2. a keying system which uses such keyways and key sections

**mushroom pin** n. a pin tumbler, usually a top pin, which resembles a mushroom. It is typically used to increase pick resistance

## -N-

**NCK** sym. symbol for "no change key," primarily used in hardware schedules

**neck (of a key)** n. 1. the portion of a bit key between the shoulder and the bit(s) 2. the portion of a cylinder key between the shoulder and the bow

**negative locking** n. locking achieved solely by spring pressure or gravity which prevents a key cut too deeply from operating a lock or cylinder

**NKR** abb. non key retaining

**NMK** sym. symbol which means "not master keyed" and is suffixed in parentheses to the regular key symbol. It indicates that the cylinder is not to be operated by the master key(s) specified in the regular key symbol; e.g., AB6(NMK).

**non-fail safe** adj. a feature of a security device designed to remain engaged, for security purposes, during a power loss

**non key retaining** adj. of or pertaining to a lock whose key can be removed in both the locked and unlocked positions

**non-original key blank** n. any key blank other than an original

**non removable key** adj. a key which has one or more cuts on it which trap the key in the lock upon insertion

**nose** n. the part of a non-cylinder lock which contains the keyway and rotates within a horn

**NRK** abb. non removable key

**NRP** abb. non removable pin

## -O-

**odometer method** n. a means of progressing key bittings using a progression sequence of right to left.

**one bitted** adj. of or pertaining to a cylinder which is or is to be combined to keys cut to the manufacturer's reference number one biting

**one column progression** n. a process wherein key bittings are obtained by using the cut possibilities in one column of the key biting array

**one pin master key** n. a master key for all combinations obtained by progressing only one biting position

**open gated** adj. pertaining to a lever tumbler whose gate is in the edge of the tumbler

**opening index** n. the index or mark to which a combination is dialed in order to effect an opening

**operating key** n. any key which will properly operate a lock or cylinder to lock or unlock the lock mechanism and is not a control key or reset key, see also "change key"





# Terminology

**operating shear line** n. any shear line which allows normal operation of a cylinder or lock

**original key blank** n. a key blank supplied by the lock manufacturer to fit that manufacturer's specific product

## -P-

**pack** n. the set of tumblers in a lever tumbler or combination lock

**padlock** n. a detachable and portable lock with a shackle which locks into its case

**page master key** n. the three-pin master key for all combinations listed on a page in the standard progression format

**paracentric** adj. 1. of or pertaining to a keyway with one or more wards on each side projecting beyond the vertical center line of the keyway to hinder picking  
2. of or pertaining to a key blank made to enter such a keyway

**pattern key** n. 1. an original key kept on file to use in a key-duplicating machine when additional keys are required 2. any key which is used in a key-duplicating machine to create a duplicate key

**personal identification number** n. a series of numbers and/or letters associated with a particular individual as a means of identification

**pick** n. a tool or instrument, other than the specifically designed key, made for the purpose of manipulating tumblers in a lock or cylinder into the locked or unlocked position through the keyway, without obvious damage. v. to manipulate tumblers in a keyed lock mechanism through the keyway, without obvious damage, by means other than the specifically designed key

**pick key** n. a type of manipulation key, cut or modified to operate a lock or cylinder

**pin** v. to install pin tumblers into a cylinder and/or cylinder plug, see also "pin tumbler"

**PIN** abb. personal identification number

**pin chamber** n. the corresponding hole drilled into the cylinder shell and/or plug to accept the pin(s) and spring

**pin kit** n. a type of keying kit for a pin tumbler mechanism

**pin stack** n. all the tumblers in a given pin chamber, see also "pin stack height"

**pin stack height** n. the measurement of a pin stack, often expressed in units of the lock manufacturer's increment or as an actual dimension

**pin tray** n. see "layout tray"

**pin tumbler** n. usually a cylindrical shaped tumbler. Three types are normally used: bottom pin, master pin and top pin.

**pin tweezers** n. pl. a tool used in handling tumblers and springs

**pinning block** n. a holding fixture which assists in the loading of tumblers into a cylinder or cylinder plug

**pinning chart** n. a numerical diagram which indicates the sizes and order of installation of the various pins into a cylinder. The sizes are usually indicated by a manufacturer's reference number which equals the quantity of increments a tumbler represents.

**plug** n. the part of a cylinder which contains the keyway, with tumbler chambers usually corresponding to those in the cylinder shell

**plug follower** n. a tool used to allow removal of the cylinder plug while retaining the top pins, springs, and/or other components within the shell

**plug holder** n. a holding fixture which assists in the loading of tumblers into a cylinder plug

**plug retainer** n. the cylinder component which secures the plug in the shell

**positive locking** n. the condition brought about when a key cut which is too high forces its tumbler into the locking position. This type of locking does not rely on gravity or spring pressure.

**post (of a key)** n. the portion of a bit key between the tip and the shoulder, to which the bit(s) is attached

**practical key changes** n. pl. the total number of usable different combinations available for a specific cylinder or lock mechanism

**privacy key** n. a key which operates an SKD cylinder, see also "emergency key"

**profile cylinder** n. a cylinder with a usually uniform cross section, which slides into place and usually is held by a mounting screw. It is typically used in mortise locks of non-U.S. manufacture.

**progress** v. to select possible key bittings, usually in numerical order, from the key bitting array

**progression** n. a logical sequence of selecting possible key bittings, usually in numerical order from the key bitting array

**progression column** n. a listing of the key bitting possibilities available in one bitting position as displayed in a column of the key bitting array

**progression list** n. a bitting list of change keys and master keys arranged in sequence of progression

**progressive** n. any bitting position which is progressed rather than held constant

**proprietary** adj. of or pertaining to a keyway and key section assigned exclusively to one end user by the lock manufacturer. It may also be protected by law from duplication.

## -R-

**radius blade bottom** n. the bottom of a key blade which has been radiused to conform to the curvature of the cylinder plug it is designed to enter

**random master keying** n. any undesirable process used to master key which uses unrelated keys to create a system

**rap** v. 1. to unlock a plug from its shell by striking sharp blows to the spring side of the cylinder while applying tension to the plug 2. to unlock a padlock shackle from its case by striking sharp blows to the sides in order to disengage the locking dogs

**ratchet lock** n. any lock which incorporates a ratchet device allowing locking in more than one position

**read** v. to decode a lock combination visually without disassembly of the lock or cylinder

**recombine** v. to change the combination of a lock, cylinder or key

**recore** v. to rekey by installing a different core

**register groove** n. the reference point on the key blade from which some manufacturers index the bitting depths

**rekey** v. to change the existing combination of a cylinder or lock

**removable cylinder** n. a cylinder which can be removed from a locking device by a key and/or tool

**removable shackle** adj. referring to a type of padlock which is unlocked by removing the shackle from the case

**repin** v. to replace pin tumblers, with or without changing the existing combination

**restricted** adj. of or pertaining to a keyway and corresponding key blank whose sale and/or distribution is limited by the lock manufacturer in order to reduce unauthorized key proliferation

**retainer** n. a component which is clipped or staked in place to maintain the working relationship of other components

**RH** abb. right hand

**RHR** abb. right hand reverse bevel

**rim cylinder** n. a cylinder typically used with surface applied locks and attached with a back plate and machine screws. It has a tailpiece to actuate the lock mechanism.



# Terminology

**rim lock** n. a lock or latch typically mounted on the surface of a door or drawer

**RL** abb. The title "Registered Locksmith" as awarded by ALOA

**RM** abb. row master key

**root depth** n. the dimension from the bottom of a cut on a key to the bottom of the blade

**rotating constant** n. one or more cut(s) in a key of any level which remain constant throughout all levels and are identical to the top master key cuts in their corresponding positions. The positions where the top master key cuts are held constant may be moved, always in a logical sequence.

**rotating constant method** n. a method used to progress key bittings in a master key system, wherein at least one cut in each key is identical to the corresponding cut in the top master key. The identical cut(s) is moved to different locations in a logical sequence until each possible planned position has been used.

**row master key** n. the one-pin master key for all combinations listed on the same line across a page in the standard progression format

## -S-

**S/A** abb. sub-assembled

**Scandinavian padlock** n. a cast case padlock with an elliptical cross section. The locking mechanism is a set of rotating disc tumblers, which engage notches in the cast shackle and may be rotated by the angled cuts cast on the key.

**screen door lock** n. a lock designed for the thin stiles typically found on screen and storm doors

**second generation duplicate** n. a key reproduced from a first generation duplicate

**security collar** n. a protective cylinder collar, see also "cylinder guard"

**selective key system** n. a key system in which every key has the capability of being a master key. It is normally used for applications requiring a limited number of keys and extensive cross keying.

**selective master key** n. an unassociated master key which can be made to operate any specific lock(s) in the entire system in addition to the regular master key(s) and/or change key(s) for the cylinder without creating key interchange

**sequence of progression** n. the order in which bitting positions are progressed to obtain change key combinations

**seven column progression** n. a process wherein key bittings are obtained by using the cut possibilities in seven columns of the key bitting array

**seven pin master key** n. a master key for all combinations obtained by progressing seven bitting positions

**shackle** n. 1. the part of a padlock, which passes through an opening in an object or fits around an object and is ultimately locked into the case  
2. the portion of a restraint which fits around the wrist, ankle, neck, waist or thumb

**shackle retaining pin** n. a pin which keeps an unlocked shackle heel in the case

**shackle spring** n. a spring which pushes the shackle into the open position when the padlock is unlocked

**shear line** n. a location in a cylinder at which specific tumbler surfaces must be aligned, removing obstruction(s) which prevented the plug from moving

**shell** n. the part of the cylinder which surrounds the plug and which usually contains tumbler chambers corresponding to those in the plug

**shim** n. a thin piece of material used to unlock the cylinder plug from the shell by separating the pin tumblers at the shear line, one at a time v. to unlock a cylinder plug from its shell by using a shim

**shoulder** n. any key stop other than a tip stop, see also "bow stop"

**shove knife** n. a tool used with a set-up plug which pushes the springs and pin tumblers into the cylinder shell

**shrouded shackle** n. a shackle which is protected from cutting or tampering by design or by the use of secondary shields

**sidebar** n. a cylinder component which enters gate(s) in tumbler(s) to allow plug rotation

**sidebar lock** n. a lock mechanism which incorporates a sidebar

**simplex key section** n. a single independent key section which cannot be used in a multiplex key system

**single-acting lever tumbler** n. a lever tumbler which must be moved a minimum distance to allow travel of a bolt, but cannot be moved so far as to restrict travel of the bolt

**single key section** n. an individual key section which can be used in a multiplex key system

**single step progression** n. a progression using a one increment difference between bittings of a given position

**six column progression** n. a process wherein key bittings are obtained by using the cut possibilities in six columns of the key bitting array

**six pin master key** n. a master key for all combinations obtained by progressing six bitting positions

**SKD** sym. symbol for "single keyed", normally followed by a numerical designation in the standard key coding system; e.g., SKD1, SKD2, etc. It indicates that a cylinder or lock is not master keyed but is part of the keying system

**SMK** abb. sub-master key

**spacing** n. the dimensions from the stop to the center of the first cut and/or to the centers of successive cuts

**spindle** n. a component which transfers rotary motion from outside a lock or latch case to an inner mechanism

**split pin master keying** n. a method of master keying a pin tumbler cylinder by installing master pins into one or more pin chambers

**spool pin** n. usually a top pin which resembles a spool, typically used to increase pick resistance

**spring cover** n. a device for sealing one or more pin chambers

**spring seat** n. the point at which a spring is anchored, located or attached and at which (from which) it exerts force

**standard key coding system** n. an industry standard and uniform method of designating all keys and/or cylinders in a master key system. The designation automatically indicates the exact function and keying level of each key and/or cylinder in the system, usually without further explanation.

**standard progression format** n. a systematic method of listing and relating all change key combinations to all master key combinations in a master key system. The listing is divided into segments known as blocks, horizontal groups, vertical groups, rows, and pages, for levels of control.

**stepped tumbler** n. a special (usually disc) tumbler used in master keying. It has multiple bearing surfaces for blades of different key sections.

**stop (of a key)** n. the part of a key from which all cuts are indexed and which determines how far the key enters the keyway

**sub-master key** n. the master key level immediately below the master key in a system of six or more levels of keying

**substitution code** n. a code whose individual characters are converted to individual key cuts or combination numbers by means of a reference table

## -T-

**T-handle** n. a T-shaped handle assembly which may be lockable

**tailpiece** n. an actuator attached to the rear of the cylinder, parallel to the plug, typically used on rim, key-in-knob or special application cylinders



# Terminology

**theoretical key changes** n. pl. the total possible number of different combinations available for a specific cylinder or lock mechanism

**three column progression** n. a process wherein key bittings are obtained by using the cut possibilities in three columns of the key bitting array

**three pin master key** n. a master key for all combinations obtained by progressing three bitting positions

**three point latch** n. a self-latching device designed to latch a door at the top, bottom and edge

**throw member** n. an intermediate actuator which engages the rear of the plug to transfer motion to a cam, tailpiece or other actuator

**tip** n. the portion of the key which enters the keyway first

**tip stop** n. a type of stop located at or near the tip of the key

**TMK** abb. top master key

**toe (of a shackle)** n. that part of the shackle, which may be removed from the padlock body

**tolerance** n. the deviation allowed from a given dimension

**top master key** n. the highest level master key in a master key system

**top of blade** n. the bitted edge of a single bitted key

**top pin** n. usually a cylindrical shaped tumbler, usually flat on both ends and installed directly under the spring in the pin stack

**total position progression** n. a process used to obtain key bittings in a master key system wherein bittings of change keys differ from those of the top master key in all bitting positions

**try-out key** n. a manipulation key which is usually part of a set, used for a specific series, keyway, and/or brand of lock

**tubular key** n. a key with a tubular blade. The key cuts are made into the end of the blade, around its circumference.

**tubular key cylinder** n. a cylinder whose tumblers are arranged in a circle and which is operated by a tubular key

**tumbler** n. a movable obstruction of varying size and configuration in a lock or cylinder which makes direct contact with the key or another tumbler and prevents an incorrect key or torque device from activating the lock or other mechanism

**tumbler spring** n. any spring which acts directly on a tumbler

**two column progression** n. a process wherein key bittings are obtained by using the cut possibilities in two columns of the key bitting array

**two pin master key** n. a master key for all combinations obtained by progressing two bitting positions

**two-step progression** n. a progression using a two increment difference between bittings of a given position

## -U-

**UL** abb. Underwriters Laboratories

**UL listed** adj. listed in a directory as having passed specific Underwriters Laboratories testing

**unassociated change key** n. a change key which is not related directly to a particular master key through the use of certain constant cuts

**unassociated master key** n. a master key which does not have change keys related to its combination through the use of constant cuts

**uncombined** adj. 1. of or pertaining to a cylinder which is or is to be supplied without keys, tumblers and springs 2. of or pertaining to a lock, cylinder or key in which the combination has not been set

**uncontrolled cross keying** n. a condition in which two or more different keys under different higher level keys operate one cylinder by design; e.g., XAA1 operated by AB, AB1. Note: This condition severely limits the security of the cylinder and the maximum expansion of the system, and often leads to key interchange.

**unidirectional cylinder** n. a cylinder whose key can turn in only one direction from the key pull position

## -V-

**vertical group master key** n. the two-pin master key for all combinations listed in all blocks in a line down a page in the standard progression format

**VGM** abb. vertical group master key

**visual key control** n. a specification that all keys and the visible portion of the front of all lock cylinders be stamped with standard keying symbols

**VKC** abb. visual key control

## -W-

**ward** n. a usually stationary obstruction in a lock or cylinder which prevents the entry and/or operation of an incorrect key

**ward cut** n. a modification of a key which allows it to bypass a ward

**warded** adj. having one or more wards

## -X-

**X** sym. symbol used in hardware schedules to indicate a cross-keyed condition for a particular cylinder; e.g., XAA2, XIX (but not AX7)

## -Z-

**zero bitted** adj. of or pertaining to a cylinder which is or is to be combined to keys cut to the manufacturer's reference number "0" bitting



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